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JANUARY 1995 • ISSUE NO. 76
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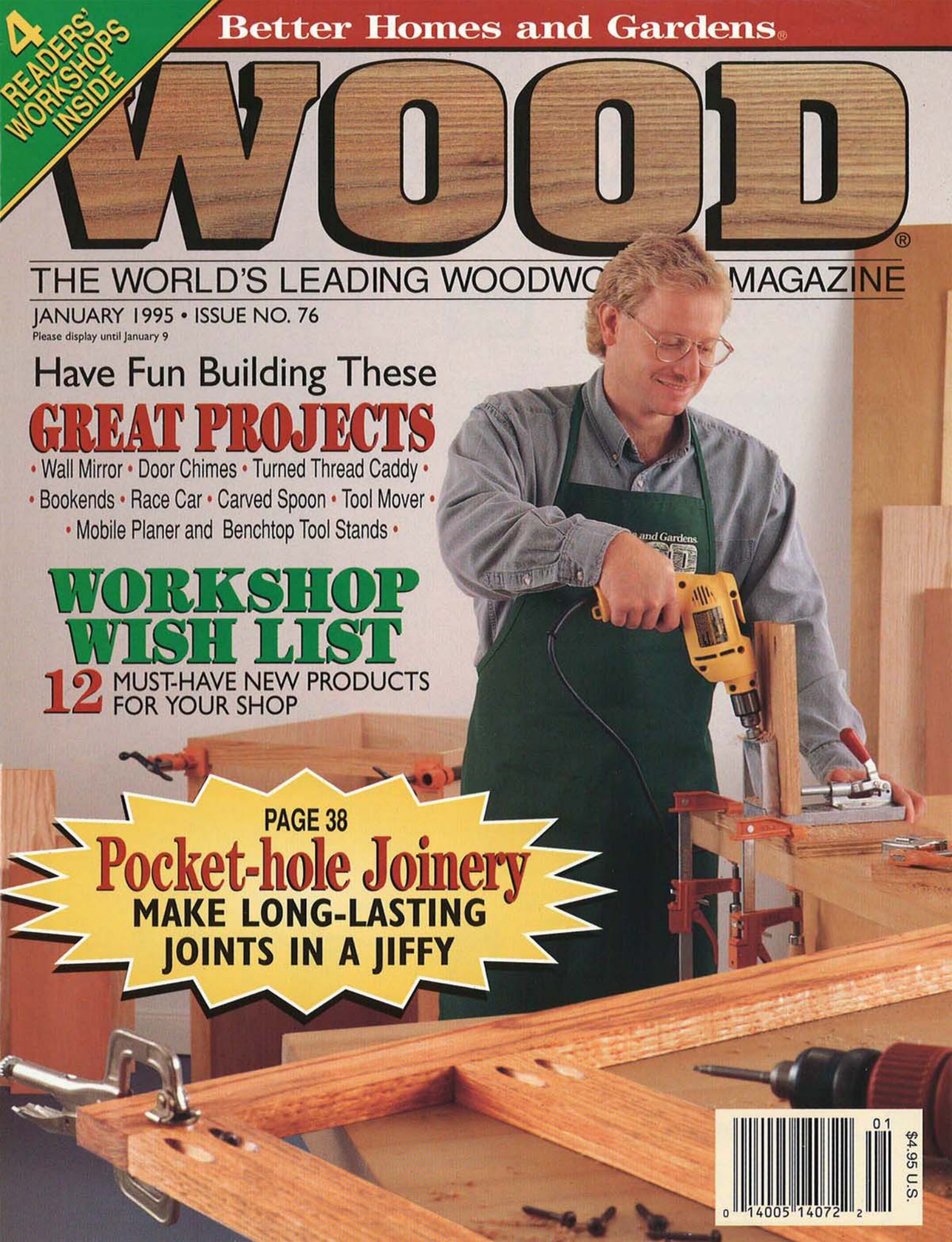

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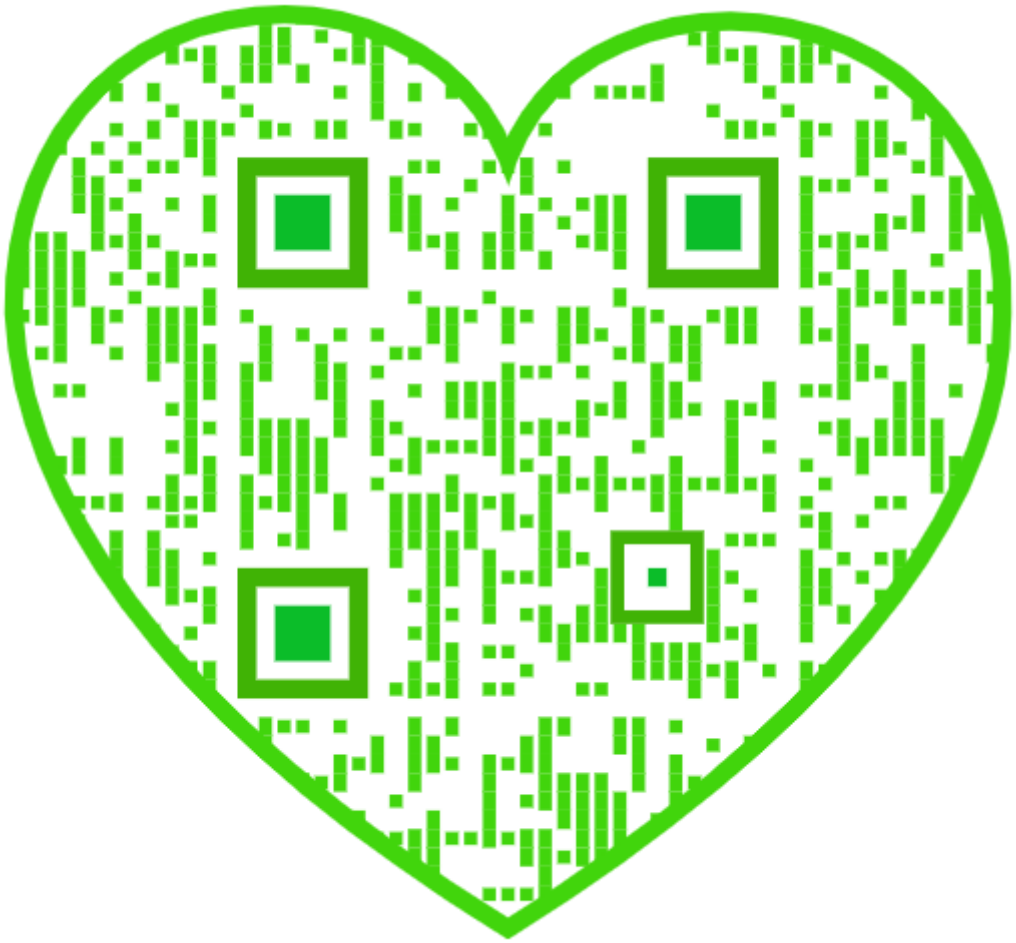

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THE EDITOR'S ANGLE

MORE TALENT THAN A WOODWORKING MAGAZINE SHOULD BE ALLOWED TO HAVE

Here at *WOOD*® magazine we take great pride in delivering to you top-quality articles full of solid woodworking information in every issue. As you might imagine, it's not an easy task developing enough original, well-researched material to fill nine issues a year—three more than our competitors, by the way. But somehow we manage to do it.

From left, newcomers Chuck Hedlund, Jan Svec, and Tom Jackson talk things over in the *WOOD* magazine shop.

The key, of course, is the people who work together as a team to make it all happen. That's why when new people join the *WOOD* magazine family, I like to crow about them a little. So, without further ado, let me introduce you to the three guys in the photo *above*.

Chuck Hedlund, our Project Builder, brings to us a wonderfully diverse woodworking background and an awe-inspiring work ethic. Before joining us, Chuck served stints as a commercial cabinetmaker and finish carpenter, owner/manager of a furniture and cabinet shop, and production manager for a custom cabinet and molding operation.

In the short time he has been on staff, Chuck, who admits to being a perfectionist, has won our respect with his project-construction expertise. I'll put him up against anyone in a test of woodworking skills. He's terrific!

Jan Svec, our new Project Builder/Assistant Design Editor, will work with Chuck in the shop and with Jim Downing, who at long last has some project-design help. Jan brings an impressive set of credentials to *WOOD* magazine, too. After obtaining a B.A. in architecture, he earned his daily bread for 10 years as a partner in a residential and commercial renovation business. Later, Jan worked as a cabinetmaker for a commercial millwork company and as a project designer at another publishing company. Watch for Jan's designs in upcoming issues; I think you'll be impressed.

And, last but not least, I'd like you to meet Tom Jackson. When applying for his General-Interest Editor position, Tom said he wanted to write in depth about a lot of things, and boy has he ever gotten his wish. Tom produces the Tips From Your Shop (and Ours) and Products That Perform sections, and writes some of our articles on tools, techniques, and interesting craftsmen. In addition to being a seasoned journalist, Tom has four years experience as a construction-crew foreman, building new houses and overseeing countless home remodelings.

Obviously, I'm excited about having all three men on the *WOOD* team. They further strengthen the best woodworking-magazine staff anywhere.

Larry Clayton

Print this article

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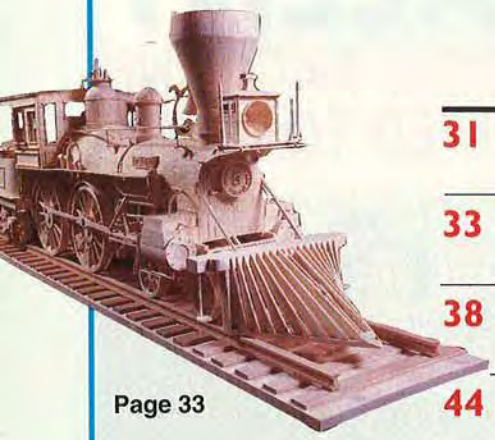

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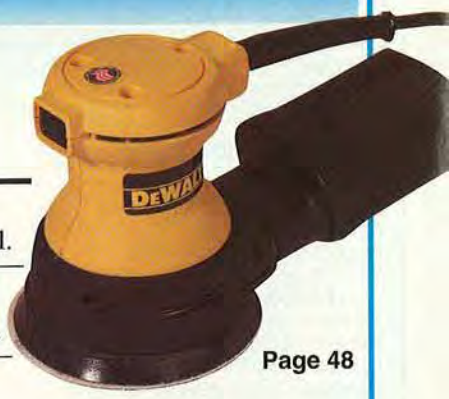

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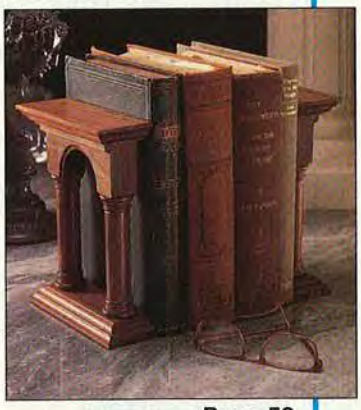

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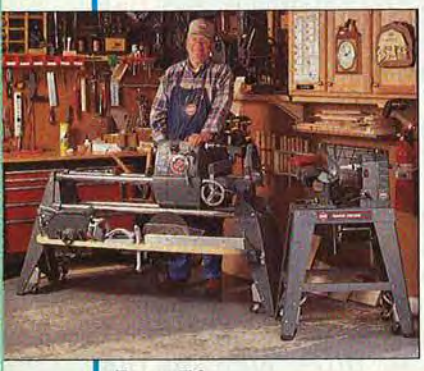

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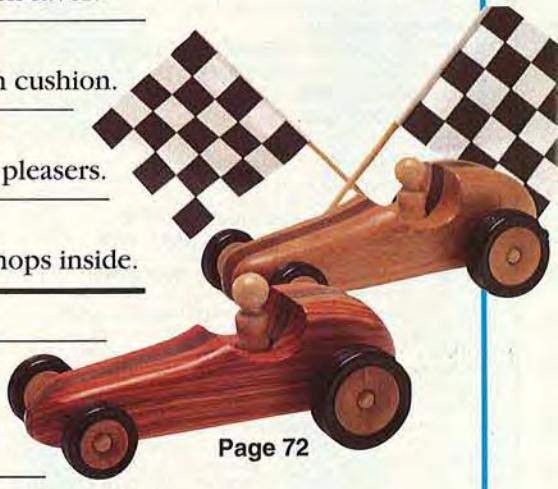

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This issue's cover wood grain: Red Elm

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THE ONLY CROWN THE COLONISTS LOVED

Wide planes made favorite Colonial moldings

This yellow birch crown molder dates back to the late 1700s. A furnituremaker probably used molding of this size and style.

Craftsmanship was on the rise in the prosperous English colonies of North America by the middle of the 18th century. Many colonists, enjoying affluence after struggling to civilize the new world, sought more refined surroundings.

Colonial carpenters and furnituremakers obliged them with English-style work, featuring ornate moldings. The largest were crown and cornice moldings.

Crown molding fits on an angle across the junction of the wall and ceiling inside a building; cornice molding, where the roof overhang meets the outside wall. Similar moldings also graced cabinetry and even picture frames.

To make these fancy moldings, carpenters and furnituremakers used crown molders—sometimes called cornice planes—like the one shown *above*. The crown molder's curvaceous blade usually measured 3-4" wide, but some were as wide as 8". The blade of the crown molder shown measures 3⅛" wide. The plane's body is 3½" wide and 12" long.

In practice, woodworkers didn't start on flat stock with these wide planes. The general form of the molding would be roughed out first, using adzes, gouges, and smaller molding planes. Only then would the craftsman bring out his big crown molder.

As often as not, a master and apprentice would team up to plow the wide, deep blade through the wood. The master guided the plane as the apprentice tugged on a rope tied to an eye screwed into the plane's front. (Though the eye is long gone from the plane in the photo, you can see the hole for it in the front of the plane.) Though it sounds simple, the actual procedure was anything but a romp in the shop. Often, the planing was accompanied by much hot-tempered give-and-take between the master and his apprentice.

Surviving crown molders date as far back as the mid-1700s. Some were made as late as the 1890s, but machine-milled moldings, which became common after the Civil War, finally ended the reign of the crown molders.

Because cornice planes and crown molders were tools of master craftsmen, they were uncommon items. That also means most didn't suffer neglect and abuse, so surviving tools are often in very good condition.

Today, collectors covet these fancy molding planes. "Marked 18th century models can be worth $2,000-$3,000," according to antique-tool collector and dealer Philip Whitby. "A pair of early Philadelphia crown molders, one with a blade more than 6" wide and the other more than 7", sold lately for $10,000," he reports.

Tool from the collection of Philip Whitby, Englewood, Colo.
Photograph: John Hetherington
Written by Larry Johnston

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HOW TO JUDGE THE FACE SIDE OF HARDWOOD PLYWOOD

Naturally, you want the best face to show when building furniture and cabinetry from hardwood veneer plywood. Often, though, the "two-faced" nature of premium grades makes that choice a difficult one.

Which is the best face? These photos show opposite sides of a premium-grade oak-veneer panel we purchased. Side A, *above left*, has fewer splices and a consistent grain pattern over its entire surface. It's our choice.

Only the premium grades of hardwood veneer plywood—AA, A, and A1—pose a problem in selecting the right face for a project. These grades have veneers on both sides that may at first glance look nearly identical (especially AA). However, subtle differences do exist, and choosing the right face can make the difference between a good end product and a superior one. Here's what you need to know.

The three characteristics of plywood face

There's a precept among expert cabinetmakers that says a project must be striking from afar and look even better up close. That's why they select the "showing" side of panels according to color first, grain second, and veneer splices last.

Color is the overall tone of the wood. In most cases you'll want a uniform veneer coloring all across the stock, or across each of several panels. In some species, where industry grading standards accept sapwood as well as heartwood for the veneer, there will be a color variation. Here, you'll want to make sure that the color variation occurs regularly enough to form a recognizable pattern.

Grain, your second consideration, should also be consistent across the face of the panel you select. If you're working with straight-grained, plain-sliced red oak, for instance, you wouldn't want a portion of it to show irregular cathedral grain. Be on the lookout, too, for exposed areas of porous end grain. These sections will soak up more stain than surrounding surfaces and appear too dark in your final project.

The selection of matching *flitches,* or strips of veneer that make up the panel face, was made by the manufacturer, but it's up to you to choose the most pleasing effect. Once you have chosen the grain you want displayed in your project, stick with the pattern wherever possible.

Splices, the faintly visible joints between flitches, should be your last consideration after you have settled on the side with the best color and grain. Only when these butted-up flitch edges interfere with appearance will this choice change priority (see the photographs *above*). When both sides look to be the same, the best face will usually have the fewest number of splices. To find them, scan the panel from side to side across the grain.

Imperfections to eliminate

Despite quality control standards practiced in the hardwood plywood industry, slight imperfections may slip by the inspectors. These flaws may become the deciding factor in selecting which face to use in your project.

The rare, but not unknown, glue stain from the veneering process should eliminate a side, for instance. Or a depression in a core ply that "telegraphs" through as surface roughness (you can find these depressions by running the palm of your hand slowly over the face veneer). Neither of these imperfections can be sanded out, and they will show up noticeably in the finished product.

What if you can't make up your mind, even after considering variations in *color, grain, splices,* and *imperfections*? Try this test: Wipe a light coat of tung or Danish oil on both sides of the panel. The oil tends to enhance and magnify everything, including imperfections, and should make the choice all the more obvious.

Photographs: John Hetherington

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What kind of wood should I use?

I plan to build a blanket chest for each of my daughters. I'd like to make them out of a "nice" wood, but I don't want to spend a fortune on materials. Can you recommend such a wood?

—Karl Ziemann, Ridgewood, N.Y.

Yellow poplar, ash, beech, sweet gum, and soft maple rate as stable furniture woods that machine easily and can be stained to imitate other more-expensive woods. Any of these species will make beautiful blanket chests.

In addition to the use of a lower-priced specie, you can save additional money by buying a lower grade of lumber where your project will permit. Many home-improvement and woodworking-specialty stores display only the top grade of hardwood lumber—FAS (first and seconds). This lumber grade provides the widest and longest clear sections after removal of the defects. However, in many situations requiring shorter or narrower pieces of clear wood, a lower-grade wood will fill the bill quite nicely. For a blanket chest, where the longest side is 4' or shorter, you can get by with #1 common grade lumber at a cost savings of about 30% over using FAS grade wood. See the box *right* for more information on hardwood lumber grading.

Also, check with your hardwood dealer or sawmill concerning volume discounts. Prices per board foot often drop dramatically if you purchase your wood in quantities of 100 board feet or more.

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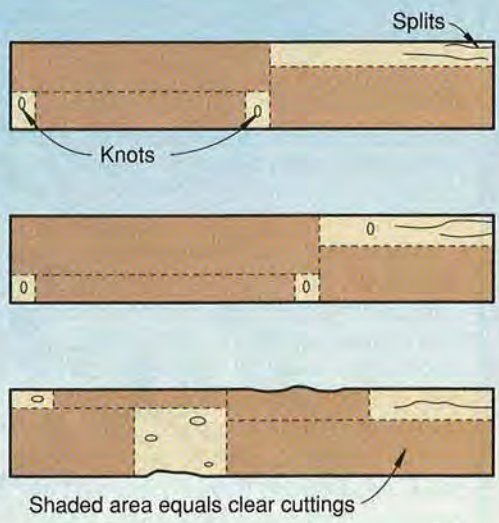

Staining bird's-eye maple

I have recently been working with bird's-eye maple, and have had difficulty in the finishing stage of my projects. When I use an oil-based stain on this wood, it obscures the bird's-eye figure. What can I do to make this intriguing grain pattern more visible on the finished piece?

—Douglas L. Villa, M.D., Iron Mountain, Mich.

Doug, to increase the clarity of the grain on stained bird's-eye maple, you will need to use a different stain. Oil-based stains consist of an opaque pigment suspended in a liquid. While these stains will add color to the wood, the opaque pigment also tends to hide the grain. For maximum grain visibility, we suggest you use a water-based aniline stain on bird's-eye maple. These dyes consist of a transparent or semi-transparent pigment dissolved in water. As a result, aniline dyes will penetrate the wood fibers, carrying the dissolved color into the grain. The swirly grain around the bird's eyes will absorb more stain than the rest of the wood, accentuating these grain effects.

You can order water-based aniline dyes from:

Woodworker's Supply
1108 North Glenn Road
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ASK WOOD

Continued from page 8

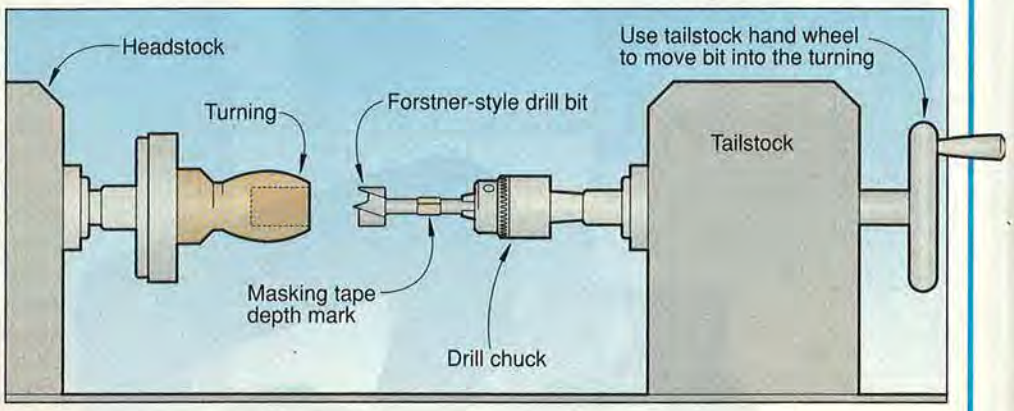
A boring job cuts vibration

I am getting a lot of vibration when I cut the interior of small wooden bottles with a parting tool. Using a sharp tool, I get a continuous ribbon of wood, removing about ¼" of material at a pass. It seems that the pressure exerted on the tool makes little difference in the amount of vibration. Do you have a suggestion on how to decrease these shakes?

—Wilfred D. Rotherham, Silver City, N.M.

We have a couple of suggestions for you. First, we suggest you use a round-nose or flat-nose scraper, or a bowl gouge to hollow out these bottles. While working inside a turned form, the shoulders of a parting tool will rub on the sides of the turning, causing vibration. We believe you will find that using a scraper or a gouge, in combination with boring a center hole, reduces the vibration when you turn these bottles. You should also end up with a much cleaner surface. This, in turn, will result in much less sanding (yea!!!).

To bore out the center of the bottle, use a multi-spur bit chucked into the tailstock. Mark the depth of the hole with masking tape on the drill bit shank. Bring the drill bit within ⅛" of the turning blank. Start the lathe, and while the blank turns, slowly feed the drill bit into the wood using the hand wheel on the tailstock. Stop advancing the drill when you reach the marker.



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DUPONT

Circle No. 1120

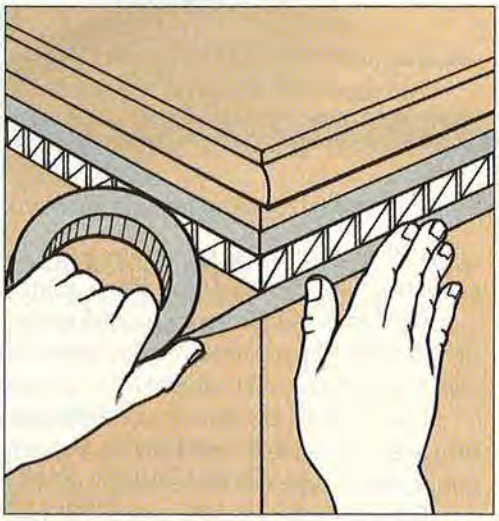
Stain-stopper for inlay

I'm having some trouble finishing a small buffet made of African mahogany. It has a fair amount of inlay material in it, which invariably gets accidentally stained as I try to darken the mahogany. How can I stain the mahogany without discoloring the inlay?

—Herb Ford-Smith, Rollinsford, N.H.

To do this, Herb, you need to protect the inlay from the stain. First, mask the edges of the inlay with masking tape. Then, with a fine brush, apply a thinned coat of your final finish as a sealer to the inlay. Remove the masking tape, and sand or scrape any areas of surrounding wood that the sealing coat may have seeped onto. Apply the stain to the areas you want to darken. The sealer will prevent the stain from penetrating the inlay, while the rest of the buffet will stain darker. Wipe down the surface with a cloth, and the stain will come off the sealed inlay.

If you plan to finish this project with a polyurethane varnish, check the manufacturer's suggested recoat time. Many polyurethane finishes will adhere to themselves only during a specific "window" of time. Too soon or too late, and the finish may separate over the inlays.



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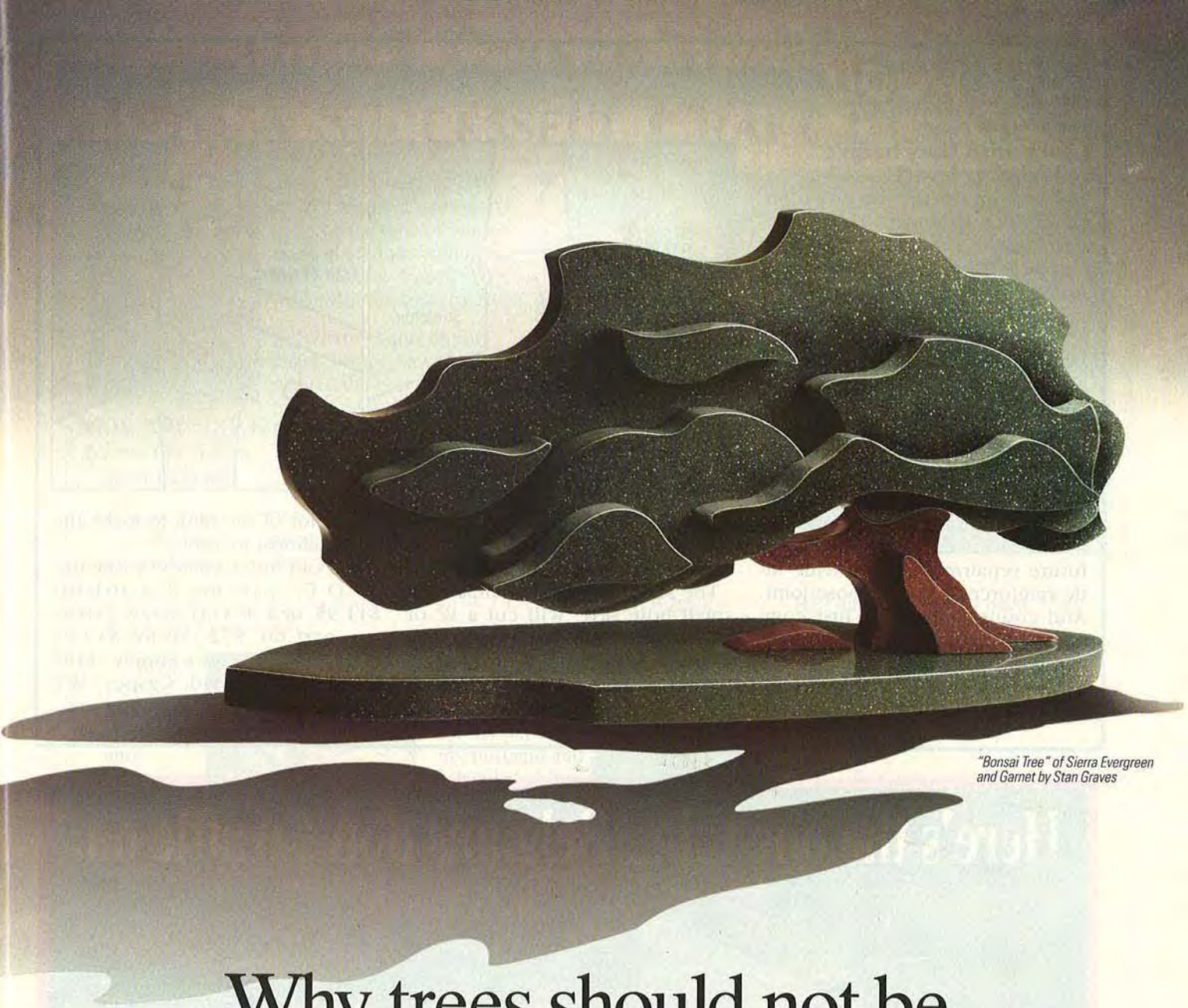

"Bonsai Tree" of Sierra Evergreen and Garnet by Stan Graves

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DUPONT

Circle No. 1120

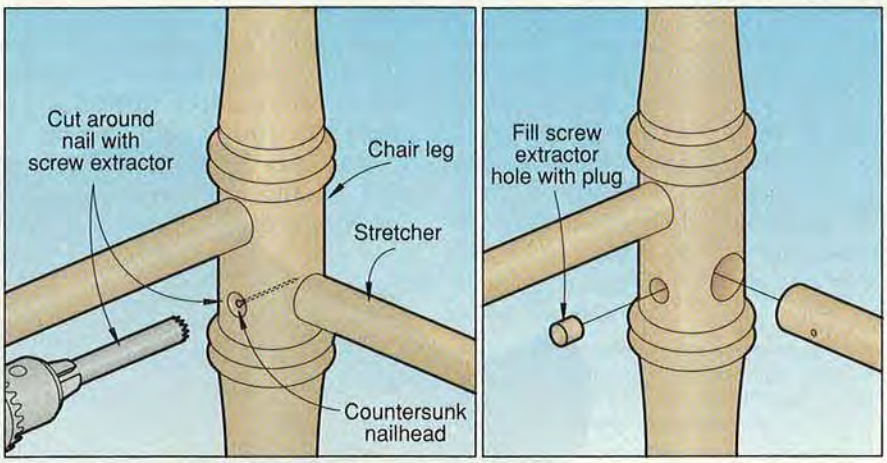
ASK WOOD

Continued from page 10

I sure wish they hadn't nailed that joint!

I have been asked to repair some dining-room chairs that were built in the Far East with joints locked in place with countersunk nails. The glue in the joints has since failed, and I need to take the chairs apart to reglue these joints. How can I remove the nails without doing a lot of damage to the chair legs?

—Ray Owen, Marlow, Okla.



Any woodworker who has repaired antiques can understand your frustration, Ray. Nails used to lock a joint cause problems to future repairmen and provide little reinforcement to a loose joint. And countersunk nails just compound the problem.

To remove these nails, first use a screw extractor, chucked in your hand drill, to remove wood from around the nail. Then, grasp the nail with a needlenose pliers and remove it from the chair leg.

The screw extractor, similar to a small hole saw, will cut a ¼"-or ⅜"-diameter hole around the nail. Fill this hole with a cross-grain plug of the same type of wood as the leg. Carefully choose the grain and color of the plug to make the repair almost invisible.

You can order a screw extractor, ¼" O.D., part no. 872-361 for $11.95, or a ⅜" O.D. screw extractor, part no. 872-378 for $12.95 from Woodworker's Supply, 1108 North Glenn Road, Casper, WY 82601. Call 800/645-9292.

Continued on page 14

Here's the one thing Belgians don't waffle on.

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Circle No. 615

How I Turned My Hobby Into A Successful Craft Business.

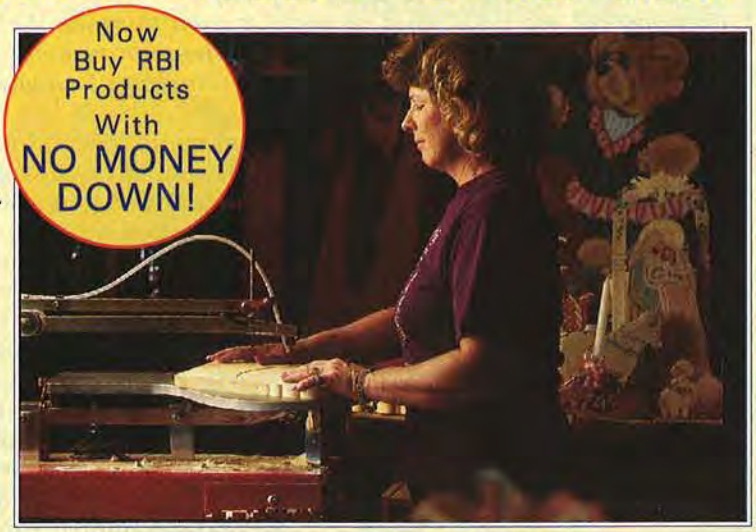
When I first considered starting my own craft business, I knew to produce the type of unique crafts customers would pay top-dollar for, I needed to work with the best materials.

NEW RBI HAWK *Ultra* Precision Scroll Saws.

The Most Advanced Scroll Saws Ever Made!

When it came to purchase a scroll saw, I knew I wanted the best. So I purchased an RBI Hawk Precision Scroll Saw.

With my RBI Hawk Precision Scroll Saw, I now produce the woodworking projects I have always dreamed of creating.



Edges Cut So Smooth They Require No Sanding.

Now, I create beautiful crafts and toys, tole painting cut-outs as well as intricate, detailed fretwork and inlays. I really love the fact that my RBI Hawk Precision Scroll Saw cuts edges so smooth it virtually eliminates the need for sanding. With my RBI Hawk, I create projects that my customers will treasure ... year after year.

Susan applying the final touches to one of her inspired creations.

How I Increased My Business By Dimensioning Wood Myself.

To produce wood to just the right dimension for my patterns, my husband and I decided to buy an RBI 812 "3-in-1" Universal woodplaner system. It prepares wood to just the right thickness. Now, I even sell these pre-cut patterns to area craft stores and my own customer's.

Using her RBI 812 Woodplaner, Susan easily and quickly dimensions her patterns.

RBI Has Everything You Need At Your Fingertips.

When it comes to accessories, RBI has everything I need. They have the very best selection of accessories including blades, work lights, instructional and pattern books, and much more.

Susan

RBI, The Artist's Choice In Scroll Saw Technology.

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Patented Rear Cam-Over - quick and easy tension setting. Another RBI exclusivefeature.

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E101

Circle No. 84

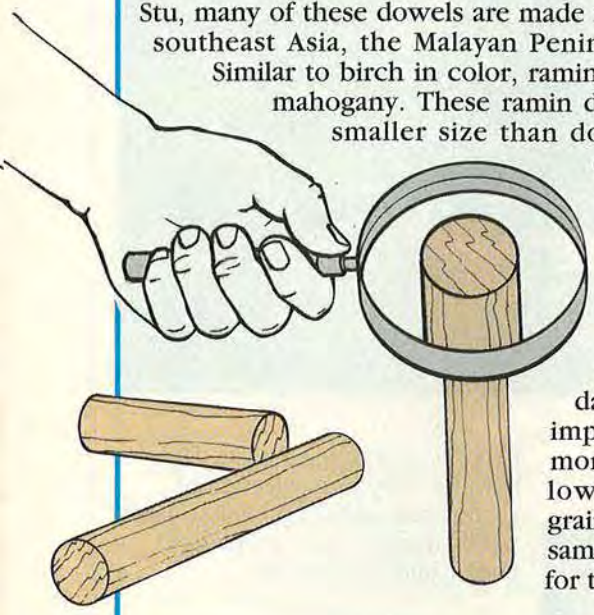
ASK WOOD

Continued from page 12

What kind of dowel is this, anyway?

Can you tell me what kind of wood is used to make the type of dowels available in most lumber and home-improvement stores?

—Stu White, Vancouver, Wash.



Stu, many of these dowels are made from ramin, a wood native to southeast Asia, the Malayan Peninsula, Sumatra, and Borneo. Similar to birch in color, ramin has an open grain similar to mahogany. These ramin dowels often are of a slightly smaller size than domestically produced birch dowels, and this size variance can cause problems when used in a doweled joint.

To determine the type of wood in a dowel, look closely at the grain and color. Birch dowels have a closed grain and display dark-brown annual rings. The imported ramin dowels will be more even in color, with a yellowish tint, and a more open grain. It's helpful to have a small sample of birch with you to use for this comparison.

Older but prettier

I heard that cherry wood turns darker with age. Is this true?

—Stan Yanoff, Plainfield, Ind.

Yes it is, Stan. Over time, black cherry wood will darken to a rich reddish-brown hue. Not much is known about the exact process that results in this color change, but the darker pigments develop as the wood reacts to air and light on the cellular level. We suggest you look at old furniture made of black cherry to get an idea of the beautiful color this wood will develop. To attain this color on your work, apply a clear finish to your cherry project, and watch the piece become more beautiful as the cherry wood deepens in color over the next few months.

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High Speed Steel Specialty Knives Perfectly match your planer or jointer!

Item	Knives	Fits	Sale (set)
SPK-005	2	Ryobi JP155	$32.30
SPK-025	2	Ryobi AP10	$32.70
SPK-030*	2	Makita 2012 planer	$35.00
SPK-035	2	Ryobi AP12 planer	$30.50
SPK-040	2	Ryobi AH-115 & AH-125	$60.80
SPK-045	2	Makita 2030N planer	$42.70
SPK-055*	2	Delta 22-540	$30.20
SPK-060	2	Makita 2040	$51.80

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Hold a very keen edge that's ideal for hard or soft wood

(Number of knives in parenthesis)

Item #	Description	Sale
SJK-005	4" Knives for Delta,Craftsman & other (3)	$14.80
SJK-010	6" Knives for old Delta, Craftsman (3)	$21.80
SJK-015	6-1/16" Knives for Delta DJ-15 (3)	$22.80
SJK-020	8" Knives for old Delta & Rockwell (3)	$28.90
SJK-025	8-1/16" Knives for Delta DJ-20 (3)	$29.60
SJK-030	12" Knives for Powermatic (3)	$41.90
SJK-035	12-1/2" Knives for RBI 612 & 812 (2)	$29.90
SJK-040	12-1/2" Knives for Grizzly & other (2)	$30.90
SJK-045	13-1/8" Knives for Delta RC-33 (3)	$47.40
SJK-055	15" Knives for Grizzly & other imports (3)	$52.90
SJK-065	20" Knives for Parks 20" planer (4)	$92.40
SJK-070	20" Knives for Delta 20" & others (4)	$93.90
SJK-075	20-1/2" Knives for RBI 820 (3)	$71.50

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(Number of knives in parenthesis)

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SCK-010	6" Knives for old Delta, Craftsman (3)	$79.00
SCK-015	6-1/16" Knives for Delta DJ-15 (3)	$81.00
SCK-020	8" Knives for old Delta & Rockwell (3)	$106.40
SCK-025	8-1/16" Knives for Delta DJ-20 (3)	$107.52
SCK-030	12" Knives for Powermatic (3)	$176.00
SCK-035	12-1/2" Knives for RBI 612 & 812 (2)	$111.00
SCK-040	12-1/2" Knives for Grizzly & other (2)	$111.00
SCK-042*	12-1/2" Knives for Delta 22-540 (2)	$154.00
SCK-045	13-1/8" Knives for Delta RC-33 (3)	$165.00
SCK-055	15" Knives for Grizzly & other imports (3)	$179.00
SCK-065	20" Knives for Parks 20" planer (4)	$334.00
SCK-070	20" Knives for Delta 20" & others (4)	$379.00
SCK-075	20-1/2" Knives for RBI 820 (3)	$234.40

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*Some older portable planers may require an adapter plate. Please contact your dealer or the manufacturer.

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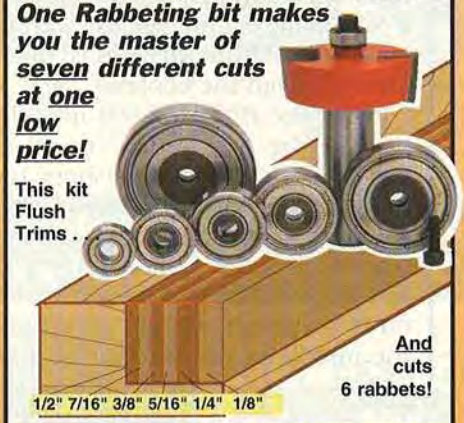

800-639 1/4" Shank Rabbet-Master Plus.....$36.90
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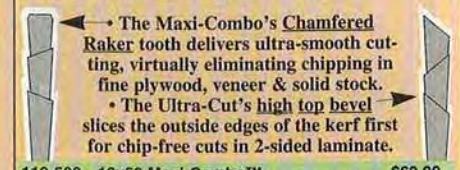

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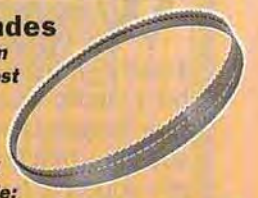

93-1/2" Blades fit Delta's 14" saws plus 14" saws by, Enlon, Elephant, Reliant, Grizzly & more!

Item	Width	Pitch	Style	Sale
BSB-931	1/8"	14 TPI	Std.	$14.00
BSB-932	3/16"	4 TPI	Skip	$9.70
BSB-933	3/16"	10 TPI	Std.	$9.70
BSB-934	1/4"	6 TPI	Skip	$9.70
BSB-935	3/8"	4 TPI	Skip	$10.00
Heavy-duty resaw blades:				
BSB-936	3/4"	3 TPI	Hook	$11.90
BSB-937	3/4"	3 TPI	Skip	$11.90
BSB-938	3/4"	6 TPI	Std.	$11.90
BSB-939	3/4"	10 TPI	Std.	$11.90
BSB-930	1"	3 TPI	Hook	$13.90
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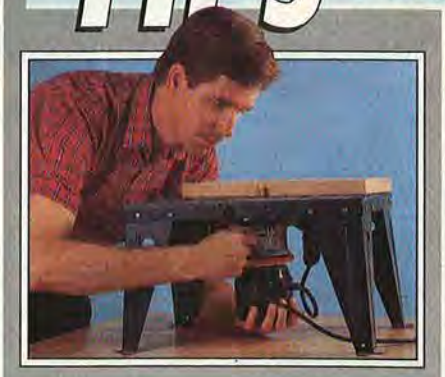
TIPS FROM YOUR SHOP (AND OURS)



What a hassle! Just try to hold the base of an upside-down router steady—and keep the router bit exactly at the correct cutting height. I usually wind up stacking blocks of wood under my router's base before tightening the wing nut—a wobbly proposition at best.

That's why I was glad to see the terrific solution sent to us by reader Duane Abels. His prize-winning router-elevation device, at *right*, gives you precise depth-of-cut control. It won't cost more than a few dollars to build, and it will save you a truck-load of aggravation.

Any time you develop a new shop tip, please take a few minutes to write and let us know. If we choose your tip, we'll pay you $40, plus you'll get a shot at winning a new tool for the top tip. Just send a brief description of the idea and a drawing or photo to:

Shop Tips
***WOOD* Magazine**
1912 Grand Ave.
Des Moines, IA 50309-3379

We try to publish only original ideas, so please send your tip to only one magazine. Also note that we cannot return submissions. Thanks, and keep sending us those tips.

Tom Jackson
General-Interest Editor

T-nuts and wheel offer precise router elevation

Trying to raise or lower a router in a router table usually requires three hands. It's hard enough just to hold all the pieces together, let alone set the height accurately.

TIP: Put your table-mounted router on this device and you can dial in your elevation changes with incredible precision. Start with a piece of ¾" stock and cut out the round pad that the router rests on. Use a Forstner bit to bore a ¾"-diameter hole in the center ½" deep. Then, drill a ⅜" hole clear through the center.

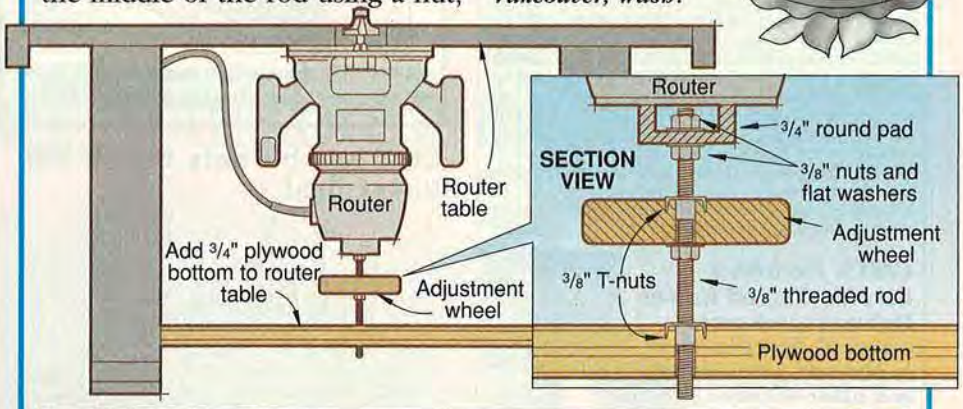
Insert the threaded rod into the hole in the pad and secure it as shown with a pair of washers and nuts. Make the threaded rod long enough to raise and lower your router about 2" when sitting in the table. Next, secure the wooden adjustment wheel just above the middle of the rod using a nut, washer, and T-nut as shown. Glue the T-nut to the threaded rod with epoxy.

Finally, install a plywood base about 3" up from the bottom of your table legs, insert a T-nut in the base, and screw the bottom of the threaded rod into the T-nut. Now, when you turn the wheel, the whole assembly rides up or down in the T-nut in the plywood base. By using a threaded rod with 16 threads per inch, you move the router 1/16" for every full turn of the wheel, 1/32" for a half turn, and so on.

—Duane Abels, Vancouver, Wash.

For submitting the top shop tip in this issue, Duane will receive a Jet DC-650 dust collector.

TOP SHOP TIP

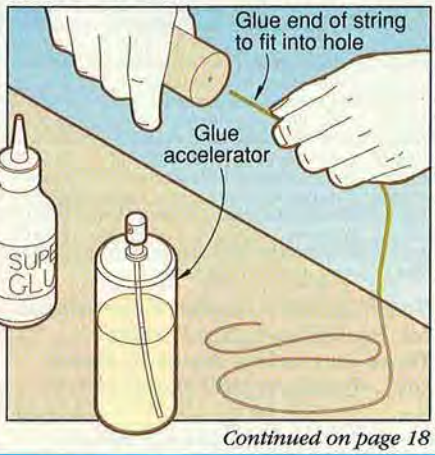


A little dab of glue helps string go through

Threading a string through a narrow hole on a long dowel or other workpiece often seems impossible. Do you have to drill an oversized hole?

TIP: No. Just soak the first few inches of string in cyanoacrylate glue and give it a shot of accelerator. As soon as the glue dries, you'll have a straight, stiff section of string that you can push through easily.

—R. G. Hamilton, Forest, Ont.



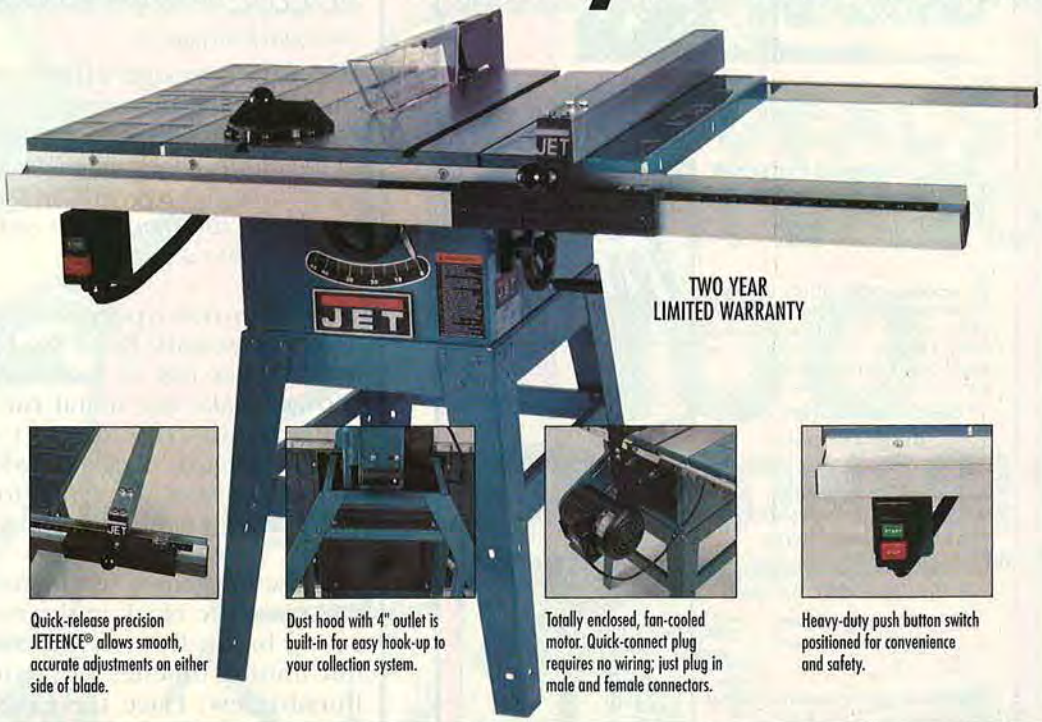
Continued on page 18

Print this article

A tablesaw built with you in mind

During the two years we spent designing our totally **NEW** 10" tablesaw, we asked woodworkers like yourself what features they wanted in a saw.

This is what they told us.



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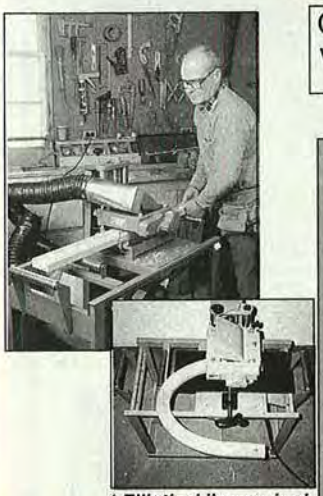

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TIPS FROM YOUR SHOP (AND OURS)

Continued from page 16

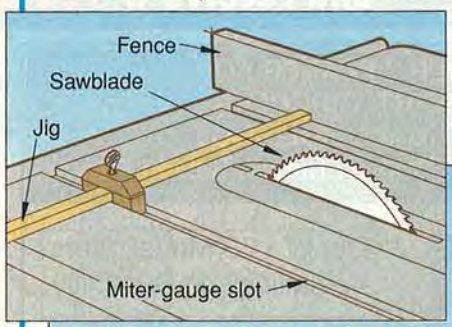
Rip-fence gauge eliminates constant measuring

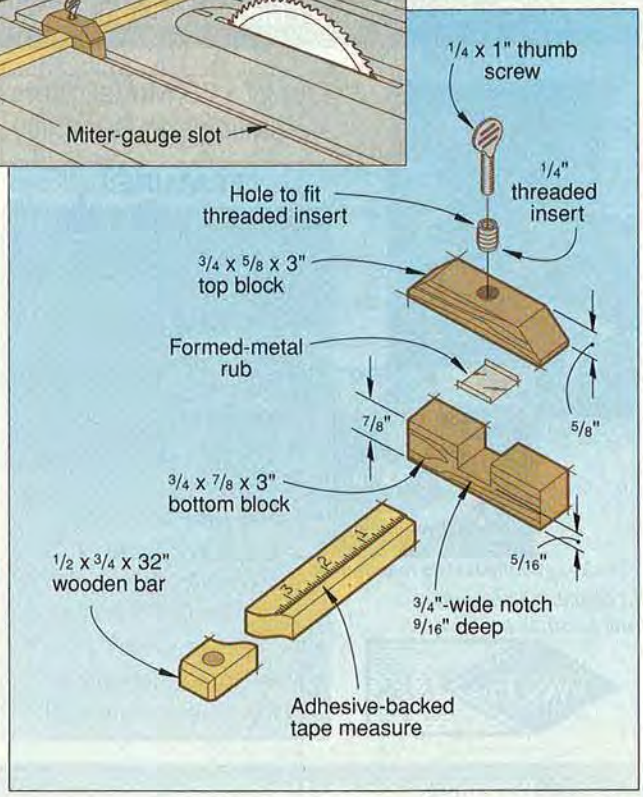
On tablesaw fences that don't always lock parallel to the blade, checking and rechecking the measurement sure gets aggravating. But if you don't check the fence, the workpiece may bind and kickback halfway into a cut.

TIP: With this rip-fence gauge you can align the fence in seconds. Build the block for the miter slot and the bar out of hardwood to the dimensions shown. Make the metal rub out of brass so that your thumbscrew doesn't dent the bar. (For a source of brass, check your local hobby shop.) For measuring from the fence to the blade, the adhesive-backed measuring tape should read from right to left.

To use the gauge, set the fence where you want it and place the block in the miter slot. Put the measuring bar in front of the sawblade and extend it out until it touches the fence. Now, tighten the thumbscrew. Place the gauge in the miter slot at the back of the table, check the measurement to the fence, and repeat the procedure on the front of the table. Adjust the fence until it reads exactly the same distance at the front and back of the table.

—Dwight L. Pierson, Rochester, Minn.





Continued on page 20

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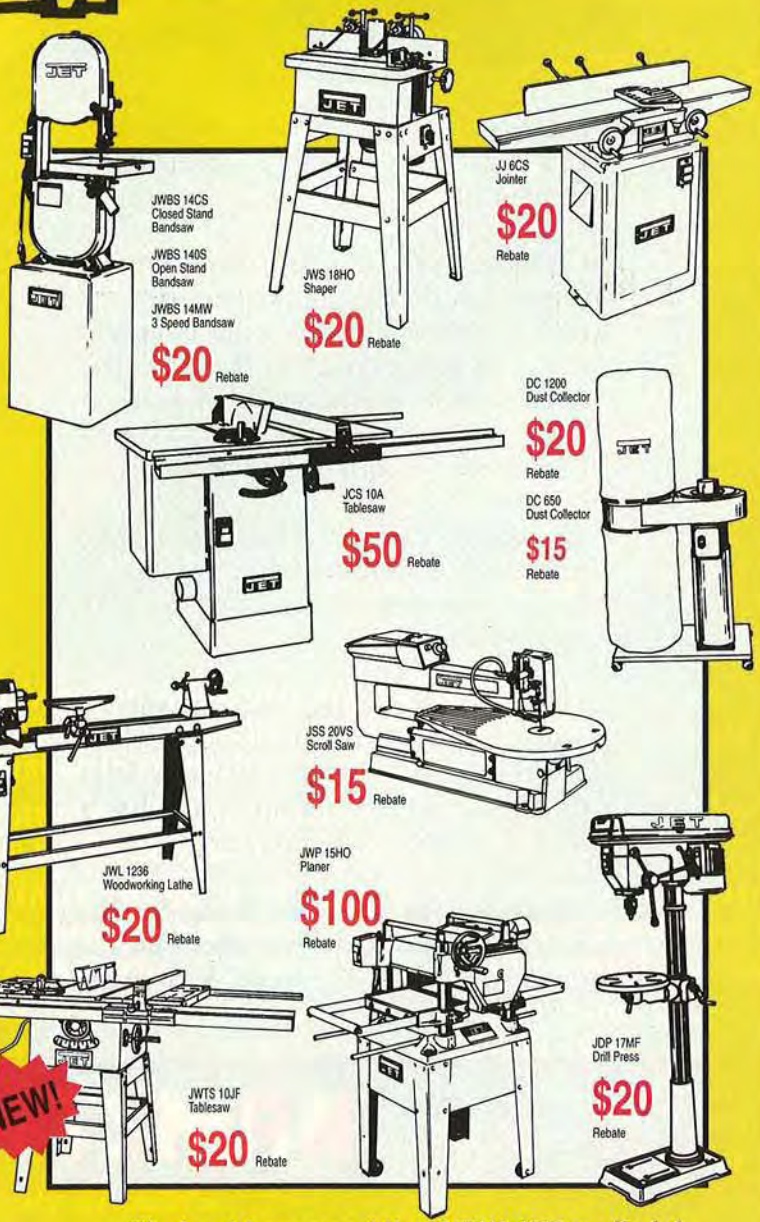

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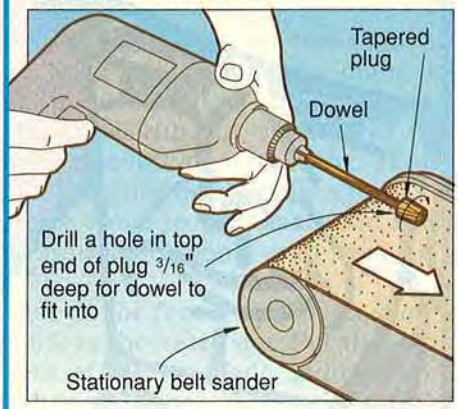
TIPS FROM YOUR SHOP (AND OURS)

Continued from page 18

Put a different spin on those odd-sized hole plugs

You've enjoyed using your new hole-plug cutter. But what do you do when the hole you need to fill in a project is not the same size as your plug cutter?



TIP: A drill and stationary belt sander will turn any oversized dowel into a tapered plug. From a dowel that closely matches the wood on your project, cut an oversize plug about 1" long. Drill a 3/16"-deep hole into the top end of the plug and glue in a smaller dowel as shown. Then, chuck the smaller dowel into a portable drill, hold it at a slight angle, and lower it—with the plug spinning—onto a moving sanding belt. This multi-directional sanding will give the plug a taper which you can adjust until you get a perfect fit. Glue the tapered plug into the hole you need to fill, trim, and sand it flush.

—Lynn Warner, La Porte, Ind.

A FEW MORE TIPS FROM OUR WOODWORKING PROS

- See how to rout a classical edge profile without a special router bit. You'll find the secret to this two-step procedure in the craftshop bookends article on *page 58*.
- The pin cushion on top of the spool tidy, *page 68*, makes a nice gift itself, You can turn both it and the finial in just a few minutes.

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TALKING BACK

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, *Better Homes and Gardens® WOOD®* Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.

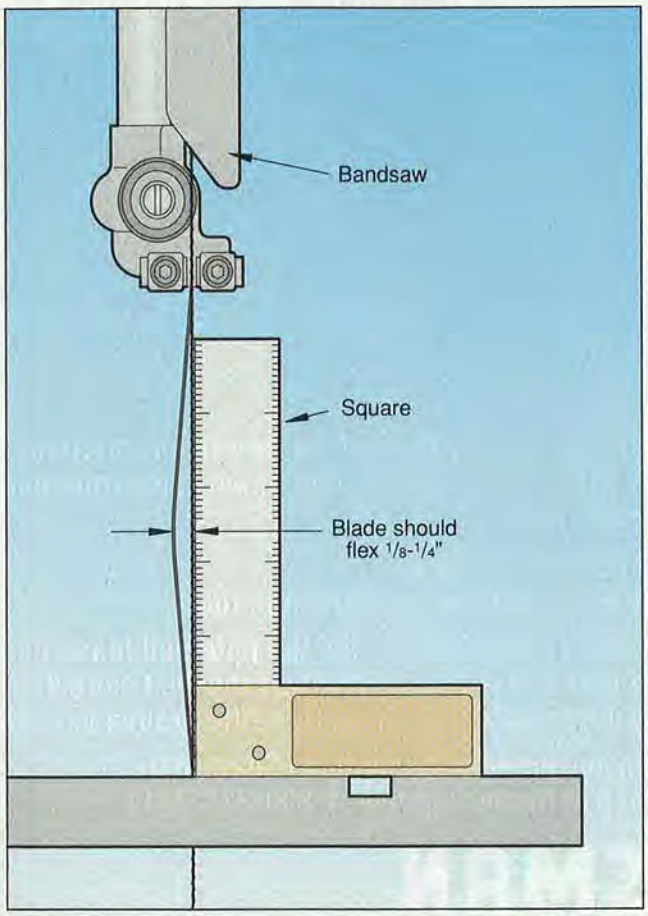
Concerned about bandsaw-blade tension

When I read your article on bandsaw blades in the June 1994 issue, I finally thought I was going to learn how to tension my blades properly. No luck. And the manufacturer wasn't much help, either. Could you tell me the way to properly tension a bandsaw blade?

—Mickey L. Brown, Columbus, Ohio

Mickey, most bandsaws have a blade-tensioning indicator that helps you adjust the tension according to the width of the blade. Here is a way to doublecheck this adjustment, and to judge the tension on bandsaws lacking a tension indicator:

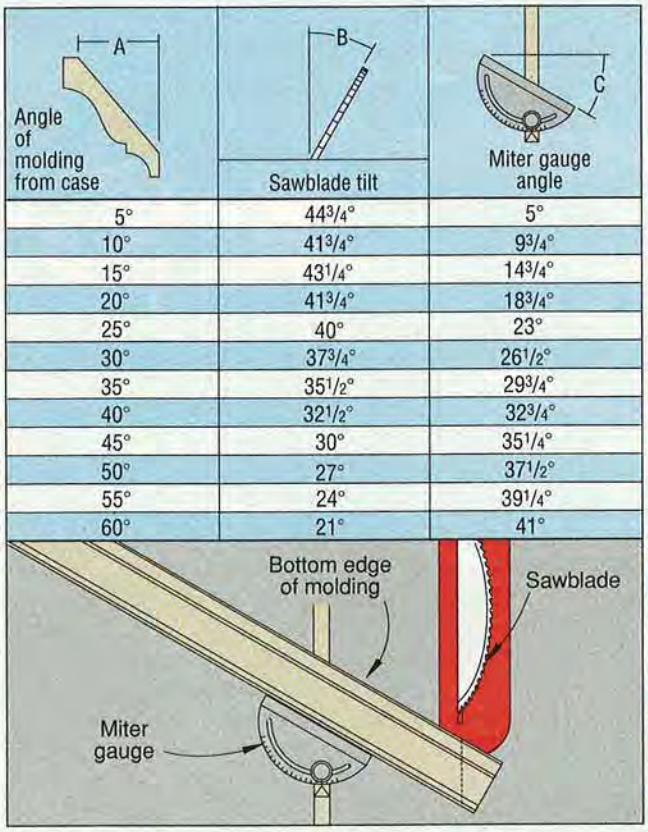
1) *Raise the upper blade guide to its maximum height.*
2) *Place a square alongside the blade, between the upper blade guide and the bandsaw table, as shown* below.
3) *Apply light pressure to the side of the blade with your fingertip. A properly tensioned blade should deflect about 1/8 - 1/4" over a 6" length.*
4) *Test this blade-tension setting by making a test cut on scrapwood. Add tension to the blade only if it seems to wander when cutting or bows backwards under cutting pressure.*



Two ways to cut a compound miter

I have only a tablesaw in my shop. Is it possible to cut a compound miter with this tool? I would like to cut the crown molding for the "Masterpiece in Pine" cabinet from the February 1994 issue.

—Julie McCamey, Whittier, Calif.



Angle of molding from case	Sawblade tilt	Miter gauge angle
5°	44 3/4°	5°
10°	41 3/4°	9 3/4°
15°	43 1/4°	14 3/4°
20°	41 3/4°	18 3/4°
25°	40°	23°
30°	37 3/4°	26 1/2°
35°	35 1/2°	29 3/4°
40°	32 1/2°	32 3/4°
45°	30°	35 1/4°
50°	27°	37 1/2°
55°	24°	39 1/4°
60°	21°	41°

Julie, the article showed the simplest method of cutting a compound miter, but it requires gluing a backing block to the molding. To cut this joint without the block, use the chart above *to find the angle setting for the miter gauge and the sawblade tilt needed to cut a compound miter. Adjust your saw to these angles. Then, place the molding, face up, on the saw table. Hold the molding in place against the miter gauge, and make the miter cut. We suggest you check the saw settings by cutting and assembling a scrapwood frame before you make the final cuts on the molding.*

We recommend that you use an adjustable triangle to carefully check the angle settings on your tablesaw. The angles shown on most tablesaws and miter gauges are off, making the adjustments to cut this joint difficult at best.

Continued on page 24

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TALKING BACK

Continued from page 22

Solution for a clogged spout

Your article "Cyanoacrylate Adhesive" in the January 1994 issue was informative and helpful. However, there was no information on how to prevent the glue from hardening in the spout. Unplugging the spout every time I use the glue is a real pain. Can you help?

—Thomas Barrie, Dingmans Ferry, Pa.

After applying the glue, lightly tap the bottom of the bottle on your workbench several times. The glue should drop back into the bottle.

We also spoke with Bill Hunter at Satellite City, makers of Hot Stuff instant adhesives. He gave us these tips for keeping your spout clog-free:

1) "Store unopened containers of instant glue in the freezer to double shelf life. However, once you have opened the container, never return it to cold storage. Placing an opened glue bottle in the refrigerator or freezer will cause moisture to condense in the bottle, and moisture is one of the catalysts that cause this glue to set and consequently to clog the spout.

2) "Keep the tip of the spout from touching the work, especially if sanding dust is present. Each time glue touches foreign matter, it cures.

3) "Between uses, reseal the bottle with the cap. This prevents dust and accelerator overspray from settling on the spout.

4) "Never wipe off the spout tip. Lint from cloth or paper will stick to the tip, causing the glue to react and clog the spout.

5) "Avoid putting pins, nails, or anything else into the spout. Trace moisture on these objects is carried into the container, causing the glue to thicken.

6) "Replacement spouts are readily available for most glues. Have an extra spout on hand in case you ruin the original one."

Continued on page 27

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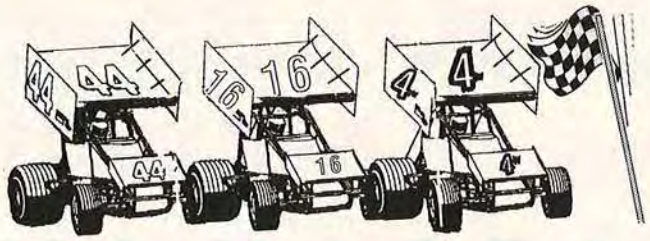

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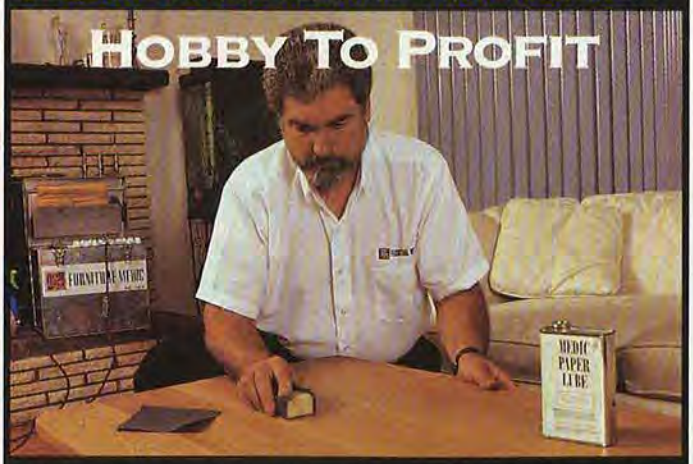

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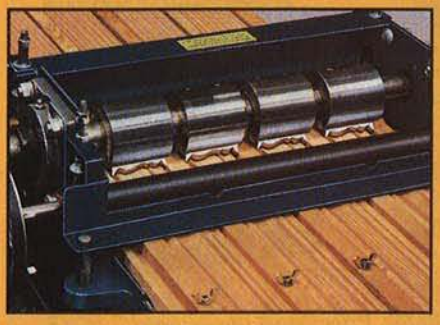

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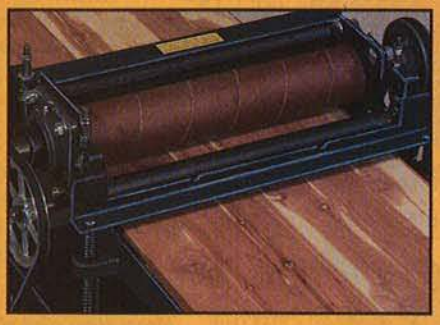

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E. D. Holtz, North Carolina

TALKING BACK

Continued from page 24

I wouldn't call it waste!

I was impressed with your story "Waste-Wood Wonders" from the February 1994 issue, and with Al Francendese's projects built from scrapwood. Quite a bit of my lumber comes from "industrial waste". I found a water-ski factory that fills a dumpster with ash and walnut and a switch-plate manufacturer that throws away cherry and oak. I have often said I could retire on waste from other people.

—Barry Nestle, Alvin, Texas

We heard from several readers with similar experiences in finding sources of usable wood scraps. Thanks to all of you who wrote us. This type of conservation makes good sense, but remember to ask permission before going through someone else's scraps.

Harvesting your own wood

I enjoyed "The Wood Gang Goes Logging" (December 1993 issue) so much I read it twice. It took me back to April of 1988 when I came across two large white-oak trees that had been pushed over to make way for a small development. Fortunately, I knew someone who had a Wood-Mizer sawmill. It took most of a day to cut these logs, but for our efforts we each got over 500 board feet of select white oak.

I stacked my share of these boards using the techniques from "Air Drying Green Wood" in the February 1987 issue. Over the next year I made many trips to that woodpile, dreaming about what these boards would become.

I have since used this wood in many projects, along with wood from a cherry tree and two more oaks we harvested. I particularly have enjoyed running the rough boards through my planer, seeing the beautiful grain emerge and knowing that a little over a year before, they were still in the tree.

—Mark Atkinson, Telford, Pa.

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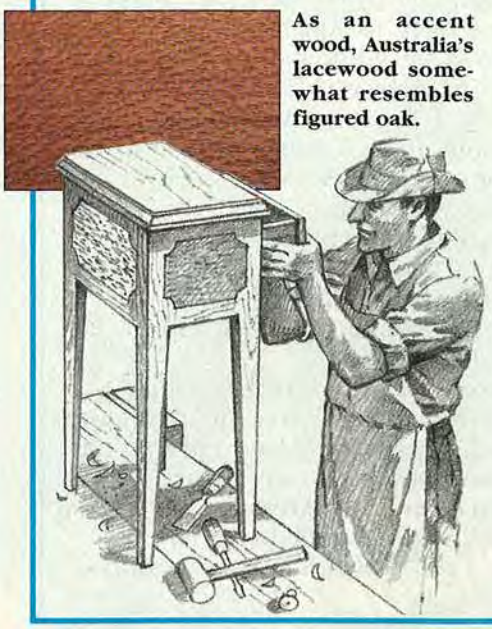
WOOD ANECDOTE

Print this article

LACEWOOD

A hardwood pinch hitter from Down Under



As an accent wood, Australia's lacewood somewhat resembles figured oak.

Sir Joseph Banks, the naturalist who accompanied seafaring discoverer Captain James Cook, spotted a rather unique tree species when he arrived in the state of Queensland, Australia, in 1770. The species that was eventually named *Grevillea robusta* exhibited colorful, toothbrush-shaped blooms.

It was about a century later that the tree seen by Sir Banks was found to offer finely figured wood. Its dazzling pattern and hue proved perfect for doors, paneling, rails and other features of prominent residences and buildings. In fact, the wood's softness to the touch and oak-like appearance prompted the name silky oak. And as such, the wood became exceedingly popular in its homeland and Europe. In North America, however, it came to be called lacewood. But, *Grevillea robusta's* popularity eventually spelled its demise.

By the early 1900s, the lacewood supply in southern Queensland was gone. There was, however, *Cardwellia sublimis*, a species similar to the original lacewood tree. It grew in northern Queensland and was quickly adopted. The substitute tree was christened as lacewood.

Today, you might see this species in art furniture, or as a jewelry box. Its ray-flecked figure will remind you of quarter-sawn oak or sycamore. And you can be assured of obtaining some.

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Illustration: Jim Stevenson

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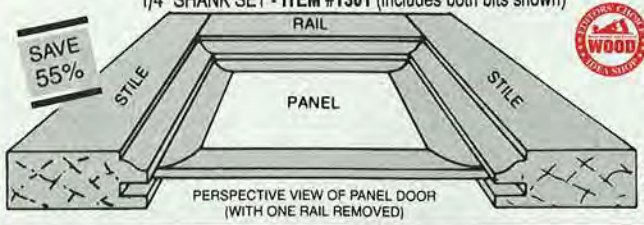

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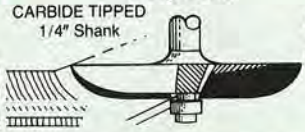

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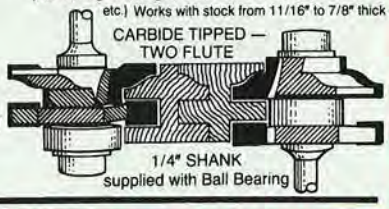

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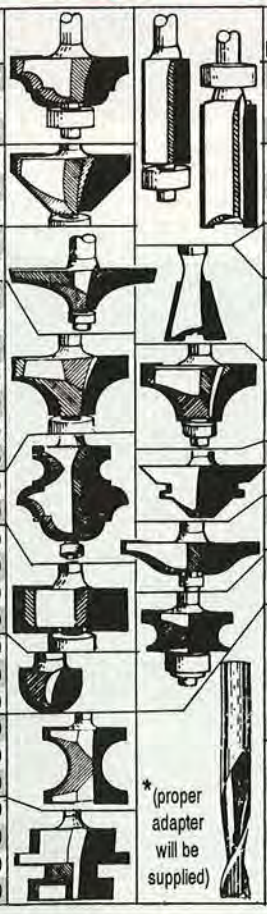

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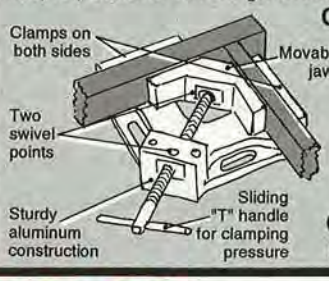

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Northwest Coast Indians had been using western red cedar long before botanist Louis Nee came across the tree on Vancouver Island in 1794. Carvers among the region's tribes shaped it into masks, ceremonial boxes, and totem poles (many of these still stand). The lightweight, easy-to-work wood also was split into planks for lodges, and as hollowed-out trunks, worked into ocean-going canoes. The tough, sinewy bark provided the tribes with material for woven baskets, braided rope, and fishing lines. No wonder the native people called this species "tree of life."

When the first pioneers ventured into the same wildly beautiful land, they took advantage of western red cedar's attributes, too. Because it was long-lasting, they split the wood into shingles, shakes, and siding for their homes, uses that today account for the wood's greatest volume.

Wood identification

We think of western red cedar (*Thuja plicata*) as a tree of the moist coastal forests from California to British Columbia and southern Alaska. But western red cedar climbs up into Idaho and Montana mountains, too. There, though, instead of 190'-heights and 10'-diameters, the species grows to little more than a shrub.

Wherever it grows, western red cedar has many local names—giant arborvitae, canoe cedar, shinglewood, and Lawson's cypress are some. Yet, the tree's Latin name translates to "sweet-smelling wood," and that characteristic helps in identification. Western red cedar's small braided leaves—not needles—have a spicey scent. And, you can readily peel off the tree's cinnamon-colored bark in strings.

Freshly cut, the straight-grained wood of western red cedar has bright, reddish-brown color that dulls to a drab brown. However, its thin sapwood usually remains creamy white. Yet, there are varying degrees of color and hue within the two extremes. Left unfinished, the raw wood gradually weathers to a silvery gray.

Natural range

At about 28 pounds per cubic foot air dry, this lightweight wood has surprising durability and decay resistance. It is nonresinous wood, but brittle, and has a low shock resistance. It remains quite stable in use.

Uses in woodworking

Perfect for the outdoors, western red cedar withstands the elements as decks and planters, fences, furniture, play structures, and sandboxes. Indoors, the wood makes attractive doors, moldings, wall treatments, and even cabinets. You can carve and turn western red cedar, too.

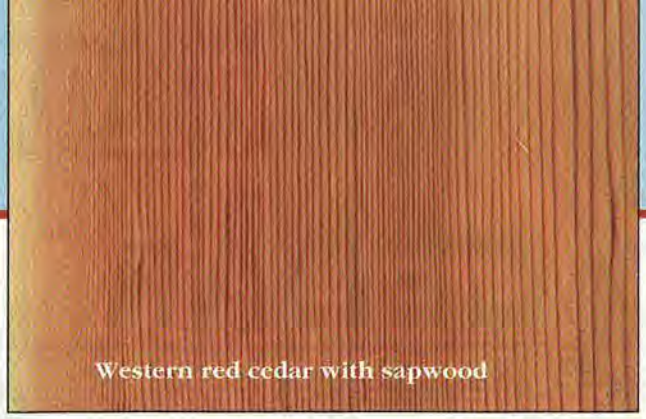
Availability

Lumber retailers sell Western red cedar only in board or timber form (or as shakes, shingles, and siding). The best grade—kiln-dried clear heart—has no knots or sapwood, and costs up to $4 per board foot. (You can order vertical-grain stock.) For lesser projects that don't require all-clear lumber, try A-grade or B-grade.

Continued

PERFORMANCE PROFILE

western red cedar
(Thuya plicata)


Western red cedar with sapwood

To avoid confusion, here are some guidelines to western red cedar's varying grades:

• Western red cedar comes in two basic appearance categories, standard clear and standard knotty. Clear grades, for furniture and cabinets, include *Clear, A-grade,* and *B-grade,* of which clear has the finest appearance and highest cost. Clear grades are kiln-dried and available in vertical grain.

For outdoor uses such as decks, fences, and planters, use *Select merchantable, Construction, Standard,* and *Utility* knotty grades. Select offers the fewest and tightest knots; Utility the most. There also are special-order grades for appearance: *Select knotty* and *Quality knotty.*

For projects that will come in contact with the ground, use western red cedar without sapwood. Knots are okay.

Machining methods

Users of western red cedar, one of the lightest softwood species, also find it among the most stable, especially when kiln-dried. However, the wood's brittleness, which results in splits, splinters, and tearout, requires some care in machining.

• Plane western red cedar with a shallow pass, and joint it so that you remove 1/16" or less.

• You won't have problems ripping this straight-grained stock; reduce splintering when crosscutting by using a fine-toothed crosscut blade.

• Avoid tearout while routing across the grain by applying a backing board along the edge where the bit will exit.

• Western red cedar's lack of sappy pitch means that you'll have little trouble joining it with your choice of adhesives. Screws, though, require pilot holes. And, you must use non-corrosive fasteners made of aluminum, brass, and other materials. Screws and nails also should be about one-third longer than what you would use in hardwood.

• Unfinished, western red cedar gradually changes to a silver-gray. But, the graying can be uneven. Without a protective finish, the wood also can literally weather away (twice as fast as redwood or Douglas fir, according to tests).

• Because western red cedar contains no pitch or resins, paints, stains, and clear finishes readily adhere. However, you'll give the wood the best protection from damaging ultraviolet rays by coating it with a pigmented finish.

Carving comments

As Northwest Coast Indian carvings attest, the wood carves perfectly. It takes detail and can be stained or painted. Its straight grain and softness can lead to splintering, though.

Turning tips

• Use only sharp tools.

• Where end grain appears, such as the bottom of a bowl, sand to final shape to avoid tearout.

SHOP-TESTED TECHNIQUES THAT ALWAYS WORK

Any exceptions—and special tips pertaining to this issue's featured wood species—appear under other headings elsewhere on this page.

•For stability in use, always work wood with a maximum moisture content of 8 percent.

•Feed straight-grained wood into planer knives at a 90-degree angle. To avoid tearing, feed figured or twisted grain at a slight angle (about 15°), and take shallow cuts of about 1/32".

•Drill pilot holes for screws.

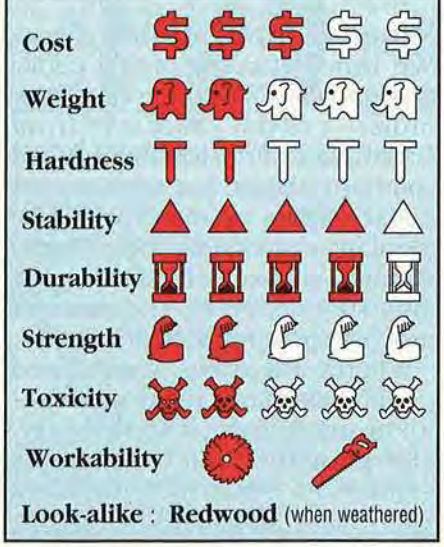
•For clean cuts, rip with a rip-profile blade having 24-32 teeth. Smooth cross-cutting requires at least a 40-tooth blade.

•Avoid using twist drills. They tend to wander in the wood and cause breakout. Use a backing board under the workpiece to reduce tearout.

•Rout with sharp, preferably carbide-tipped, bits and take shallow passes to avoid burning.

•Carving softwoods means fairly steep gouge bevels—greater than 20°—and deeper cuts.

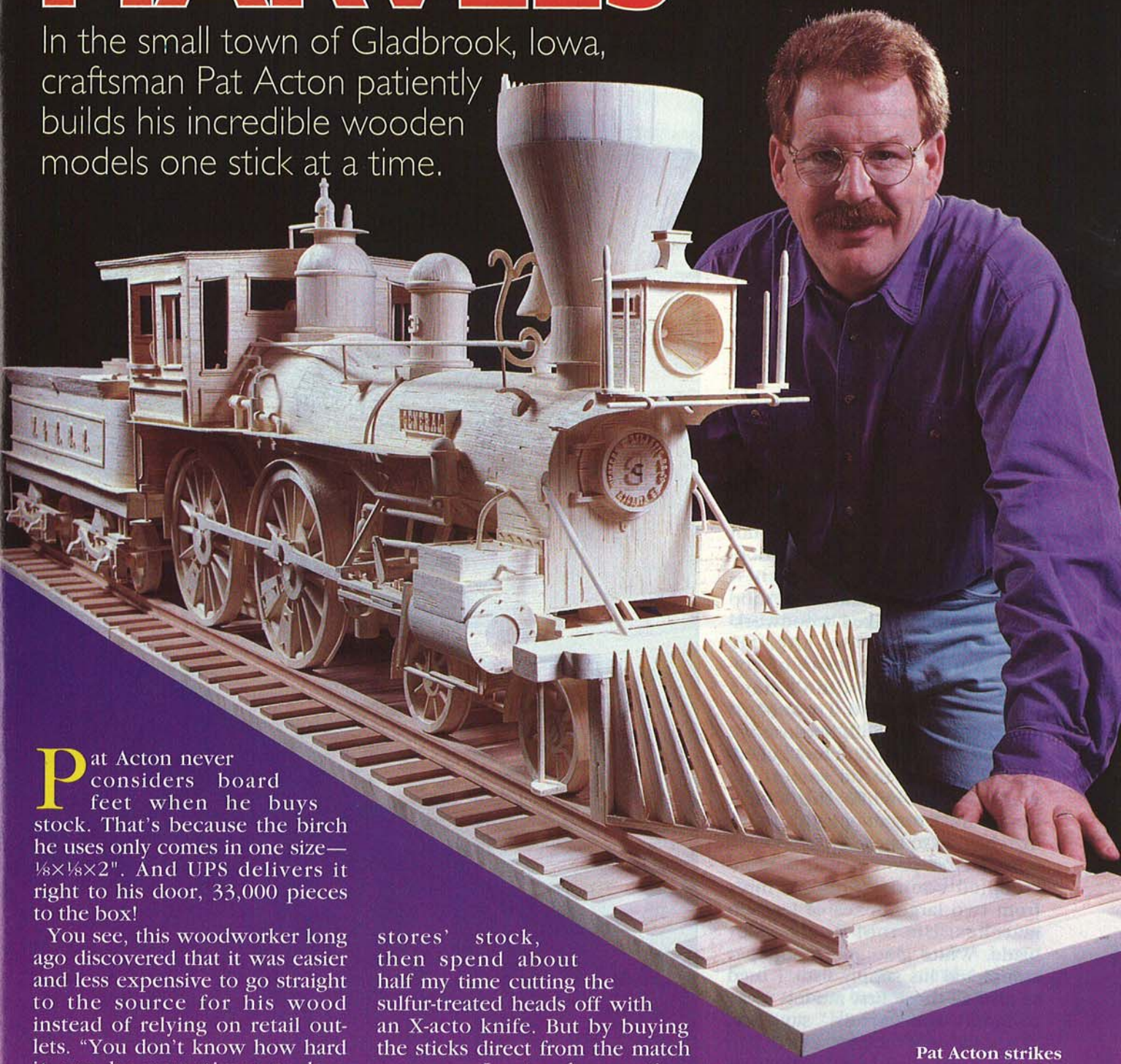
W. RED CEDAR AT A GLANCE



Compiled with woodworkers Robert Crevlin and Chuck Hedlund Illustrations: Steve Schindler

MATCHSTICK MARVELS

In the small town of Gladbrook, Iowa, craftsman Pat Acton patiently builds his incredible wooden models one stick at a time.



Pat Acton never considers board feet when he buys stock. That's because the birch he uses only comes in one size—⅛×⅛×2". And UPS delivers it right to his door, 33,000 pieces to the box!

You see, this woodworker long ago discovered that it was easier and less expensive to go straight to the source for his wood instead of relying on retail outlets. "You don't know how hard it can be sometimes to buy enough wooden stick matches," says Pat, faking concern. "Really, I used to buy up all of the local stores' stock, then spend about half my time cutting the sulfur-treated heads off with an X-acto knife. But by buying the sticks direct from the match company, I not only save time and money, but gain a bit of length on each stick." Pat pauses a moment to inspect the aircraft-

Continues on next page

Pat Acton strikes a pose with his matchstick locomotive *The General*. Built stick by stick, it took 400 hours and 75,000 tiny timbers to create.

carrier-to-be on his workbench. "And as you can see, in this work every little bit helps."

No kidding. Pat's model of the famous Civil War-era steam locomotive, *The General (*he's posing with it in the photo *previous page)*, required 75,000 matchsticks. How many more would it have taken if Pat would have had to shorten each stick by the length of a matchhead? Certainly it would have added immensely to his 400 hours of building time!

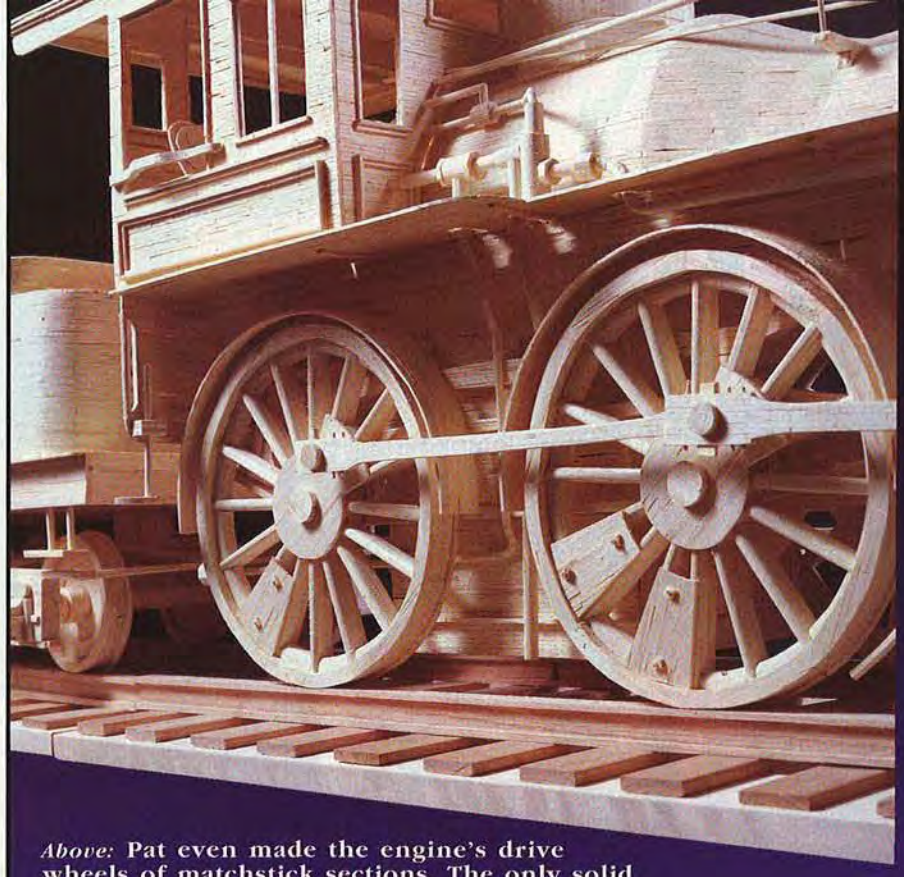
See what comes from playing with matches

People walking into the Marshalltown, Iowa, public library where Pat displays some of his work, greet his models with astonishment. "Wow! Those are all matches?" they say. Or, "I can't believe that anyone could do that!" But Pat doesn't build his historically accurate models to amaze anyone. To him, making them is an entirely serious hobby, one not without its own brand of woodworking techniques.

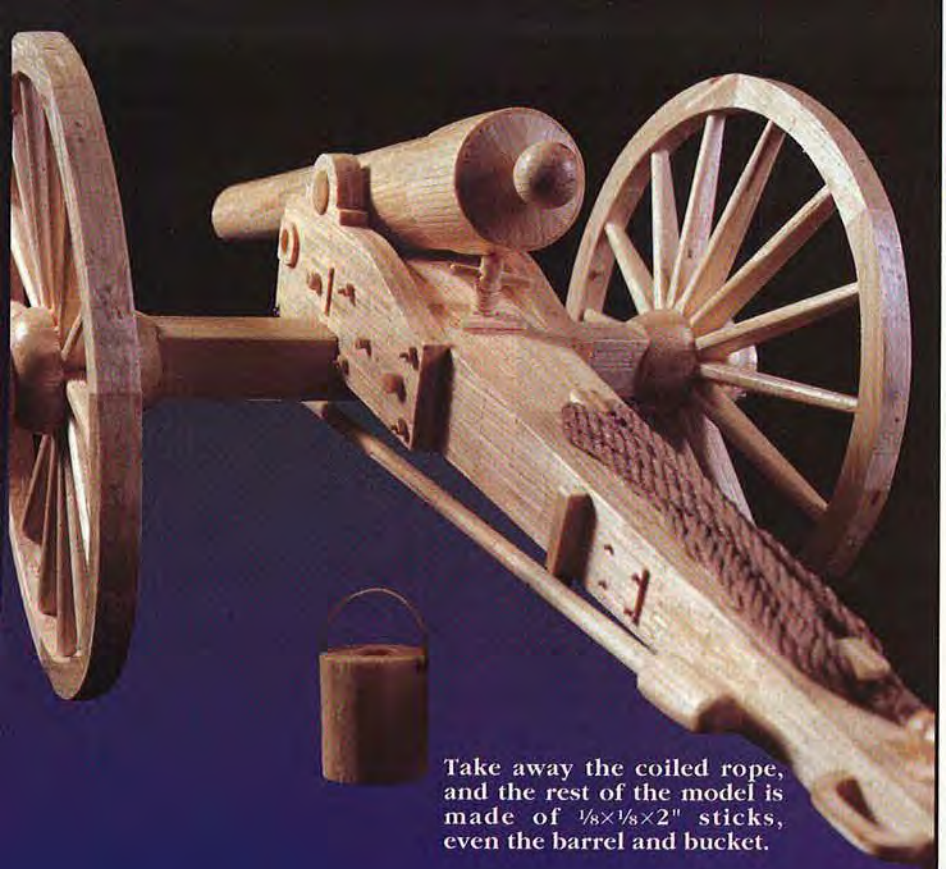
"In high school, I had taken shop class, and really liked woodworking," Pat recalls. "But after my wife, April, and I got out of college in 1977, we didn't have much money, and I couldn't afford any tools. Still, because we worked jobs with different schedules, I needed to do something with my time when she wasn't home. So I began 'playing with matches' so to speak."

Pat's first project was a high-steepled country church, built from two large boxes of kitchen matches. His tool was a razor blade. White glue and sandpaper completed his supply list. "I used to give all those first models away to family and friends," says Pat. "They thought they were cute."

Seventeen years later, all that has changed. The forty-year-old craftsman, who works full-time as a community-college vocational counselor, now has nearly a full



Above: **Pat even made the engine's drive wheels of matchstick sections. The only solid wood in the display are the railbed and rails.**



Take away the coiled rope, and the rest of the model is made of 1/8×1/8×2" sticks, even the barrel and bucket.

A Civil War buff, Pat did extensive research to accurately depict this 12-pound parrot gun and limber that measures 3' long.

complement of tabletop woodworking machines crammed into his basement shop. And he's come a long way since that little matchstick church.

You can believe it or not

Ripley's Believe It or Not Entertainment Corporation last year bought 10 of Pat's then-largest models to display in their museums around the world. Pat's work had just the right "Oh-my-Gosh" quality that they sought. For instance, his model of the stern-wheeled riverboat the *Robert E. Lee* measures 6' in length, required 50,000 matchsticks, and took 600 hours to build. Christopher Columbus' 15th-century sailing ship *Santa Maria* was 4' long, used up 40,000 sticks (Pat first stained each of them!), and involved over 800 hours. Ripley's Believe It or Not also got a 7'-long model of the aircraft carrier *U.S.S. Forrestal* (60,000 sticks, 700 hours), a Navy Corsair airplane with a 4' wingspan (15,000 sticks, 300 hours), and a 4'-tall cowboy figure that contained 25,000 tiny timbers, just to pick out a few. And what did Ripley's pay out?

"I like to say that I'll sell anything that I make for a nickel a stick," says an amused Pat. "But I did a little better than that!"

Matching up matchsticks

There's no getting away from it: Matchstick woodworking takes loads of patience. It also demands yellow glue by the gallon and a ready supply of stock.

"I buy the least expensive yellow woodworker's glue that I can find," notes Pat. "And I order three or four boxes of matchsticks at a time." He laughs recalling the first delivery by UPS of his woodworking stock. "The driver had this quizical look on his face. There he was, struggling with this big box with some holes in it and these little sticks poking out. I had

Continued

to take him down to the basement to show him what I was doing."

Pointing out that working with matchsticks does have its frustrations, Pat tells how stock can sometimes vary. "Most matchsticks measure ⅛" square and 2" long. But when the first company I bought from went out of business, I had to find another supplier. And the second supplier sent me sticks that were ⅛" square. Try to make scale measurements come out easily with those dimensions! So I scouted around and found another company."

Then, of course, there's the laying up of the sticks. "I glue them down one at a time, staggered edge to edge and end to end. So curved surfaces were tough. I used to cut sticks into shorter parts to get them to go around a bend. Real tedious," Pat says. "Then I discovered that I could just crush a stick with a needlenose pliers at several points, and it would bend without losing structural strength. That was a real time saver."

Boards to build up

Another technique Pat employs is sheet-building. "To get a large flat surface, such as a carrier deck or the side of a building, I glue up sticks on a 2×4' base of clear acrylic. When the sheet is covered with sticks, I let the glue dry for three days, then peel the acrylic away [see photo *below left*]. This gives me a rough side to sand for the outside of objects and a smooth side from the glue that always faces inward. The coat of dried glue adds stability."

To Pat, the sheets of sticks become like any other woodworker's boards. He can rip them on his tablesaw, crosscut them, saw them to shape on the bandsaw, and glue them into laminations.

Just how does Pat keep track of his tiny stock so that he knows how many pieces go into each model? "It's not an exact calculation," Pat comments, "but the sticks do come 33,000 to a box. If I've used half a box for a project, that's 16,500. And although I've never thought about it before, I could figure it out in board feet. Let's see—32 matchsticks equal one square inch, and there's 144 square inches in a board foot. So that means that 4,608 matchsticks equal a board foot."

To finish or not to finish

Besides people's questions regarding the number of matchsticks and number of hours in each model, Pat is frequently asked why he doesn't paint his models. He has an honest answer. "Painted, they look like a pretty crude model," he says. "I mean really bad. I painted a model I made of a P-51 Mustang airplane, just to see what it would look like. When I exhibited it at the community celebration, a guy came to look it over and said, 'Now I see why you don't finish them!"

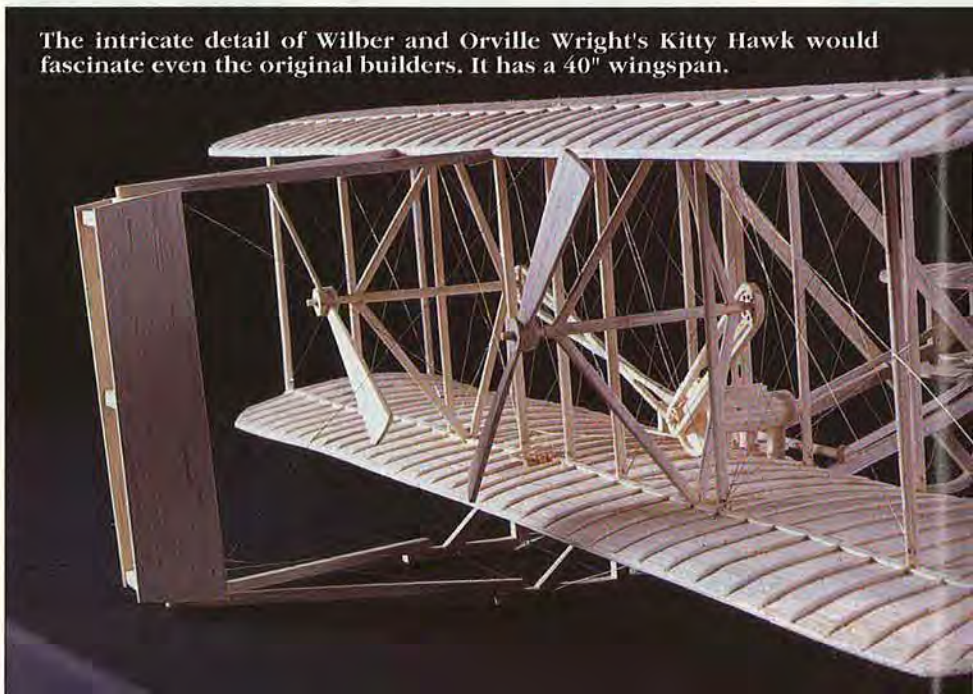
That's because Pat doesn't rely too heavily on sandpaper. Too smooth a surface would negate the effect of all the glued-up matchsticks. Instead, Pat goes over the outside of his models with 80- then 120-grit. Just enough for a smooth feel when handling. For a finish, he settles on two coats of spray lacquer. "That's just to seal the wood good," he notes.

Marching toward a million

You'd think that after gluing up a couple of hundred thousand matchsticks that Pat might just want to take it easy for awhile. Perhaps even scale down a bit. But not so.

"Heck, I'd like to build some-

For carrier decks and other flat expanses, Pat uses sheets of glued up matchsticks. The acrylic sheet easily peels off.



The intricate detail of Wilber and Orville Wright's Kitty Hawk would fascinate even the original builders. It has a 40" wingspan.

thing taller than I am," says Pat. "In fact, I'm thinking of doing a Maine lighthouse. You know, with the tower and the house." And if he used enough sticks, would that set a record?

"Not really," he replies. "The *Guiness Book of World Records* lists a guy who built a replica of the Milan Cathedral in Milan, Italy. He used a million sticks! My goal, if I really have one, is to make the most projects with that million sticks. I'm nearly halfway there!"

And would that constitute giving up his job to build with matchsticks full-time? Would he consider that?

"I've certainly thought about doing this full-time. I know that I wouldn't get tired of it," says the model builder. "But really, there's not much of a market out there for my work, if you know what I mean. I'd like to do this and think that I could eat, too.

"I do have this dream of someday building an attraction-type place to house the matchstick pieces," Pat continues. "People might come to see them."

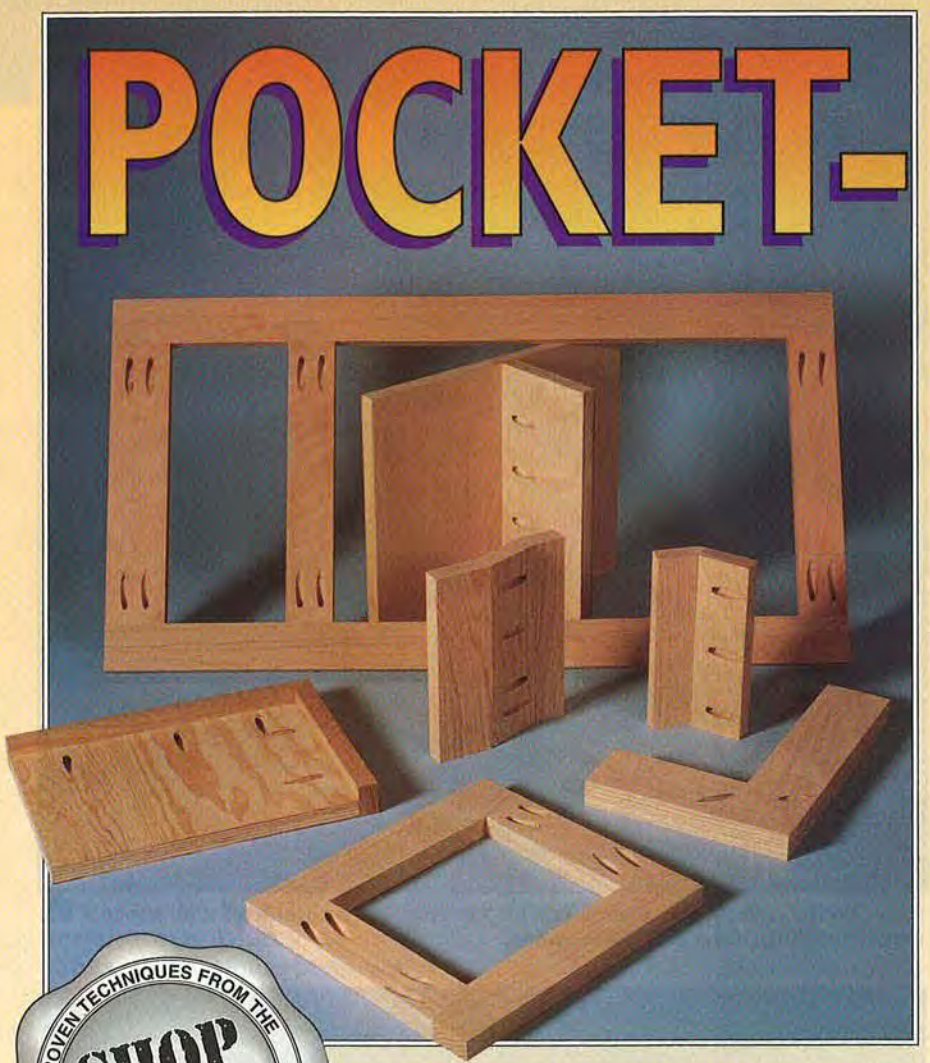
Pat, go ahead and build it. Indeed, they will come.

Written by Peter J. Stephano
Photographs: John Schultz

Pat's carrier under construction will be 78" long when complete. Ribs support the matchstick hull of the 1:132 scale model.

Before mounting the crane, Pat strung hair-thin copper wire through holes he drilled in stanchions made of...you guessed it, matchsticks.

POCKET-HOLE



PROVEN TECHNIQUES FROM THE SHOP TESTED WOOD MAGAZINE SHOP

Of the dozens of different ways to join one workpiece to another, nothing beats pocket-hole joinery for flat-out speed and simplicity.

Imagine a magical tool that cuts the construction time of cabinetry and other woodworking projects in half, and eliminates the need for an expensive arsenal of clamps. Pocket-hole jigs help give you such advantages. And best of all, they're easy to use.

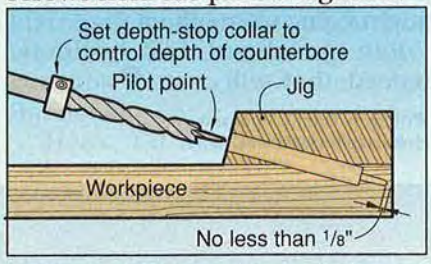
Traditional joinery—chopping mortises and cutting tenons, or drilling and aligning dowel holes—takes a lot of time. With a pocket-hole jig, however, you can join two pieces of wood in just minutes. All it takes is a portable electric drill, the jig, and a counterbore bit designed to be used with the jig. You'll also need a special type of auger-point screw designed to seat tightly and not split the wood.

You can find a variety of pocket-hole jigs on the market, and we compare today's models starting on *page 40.* To demonstrate the techniques of pocket-hole joinery in building cabinets, we used the Kreg jig since it was the best jig for this task. To get you started, we'll take a look at the basics of pocket-hole joints and then show you how to build cabinets and other types of projects.

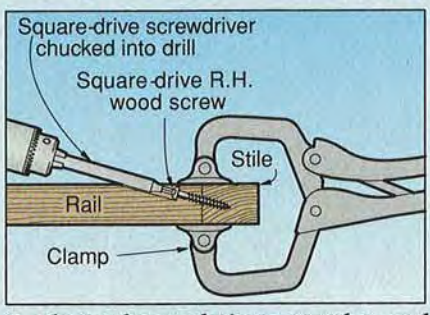
Pocket-hole basics

A pocket-hole joint is nothing more than two workpieces butted together and joined with a screw. What makes a pocket-hole joint different is that you drive the screw into a hole (the pocket) that is slanted at 15°. The pocket also contains a pilot hole to guide the screw into the adjoining piece, and it gives you a recess so that the screw sits below the surface of the workpiece.

To make a pocket-hole joint, simply clamp the jig to the workpiece (or the workpiece to the jig in the case of the Kreg jig), and drill your hole. Then remove the workpiece from the jig, apply glue to the mating pieces, butt them together, and drive the screw in. Once the screw is tight, you can remove the clamps since the screws hold the pieces together.



1. Clamp the jig to the workpiece and drill the pocket hole. Set the stop collar so the pilot stops about ⅛" from the end of the workpiece.



2. Clamp the workpieces together and drive the pocket hole screw into the adjoining workpiece. Once the screw is tight you can release the clamp.

JOINERY A faster, easier way to build

How to breeze through your next cabinetmaking project

Making face frames: As easy as 1–2–3

Begin by cutting your cabinet face-frame pieces and marking the position of the joints. Then, clamp each rail into the jig, and drill two pocket holes into each end with the counterbore bit, as shown in *Photo 1*. Make sure that you drill

the holes on the inside surface—the one that won't show. Most counterbore bits have an adjustable stop collar. Set this collar so that the pilot point of the bit stops about ⅛" short of the end of the rail, as shown in the illustration *left*.

Now, spread glue on both adjoining surfaces, clamp the rails to the stiles (taking care to keep the two pieces flush), and drive in the screws as shown in *Photo 2*. (The clamp shown is an optional accessory to the Kreg jig, but any clamp that keeps both surfaces flush will do.) Most pocket-hole screws have square-drive heads to give the driver a solid grip on the screw, so you'll need an appropriate driver. A 6"-long driver makes tight spots easier to negotiate. Once you drive the screws tight, remove the clamp.

Carcase assembly: It's fast and built to last

Start by cutting out the plywood sides for your cabinet. Then, drill pocket holes every 6" along the front edge of the plywood. (With the Kreg jig, we clamped 1×4" boards to either side of the jig and marked off lines every 2" to help with the spacing of holes, as shown in *Photo 3*.)

The big challenge with pocket-hole joinery is to put the pocket holes where they won't show, if possible. Since this cabinet will receive drawers, the sides of the drawers will cover the holes from view. If this cabinet were designed for a door, the sides of the plywood would be visible, and your best bet would be to put the pocket holes on the opposite side, again, if possible. If you can't avoid visible pocket holes, try to place them where the shelves will cover them.

Now, clamp the face frame against the front edge of the plywood and drive in two screws, top and bottom, on each side. Back out these four screws, remove the clamps, and apply glue to the edge of the plywood. Now, reattach the face frame with the four screws, clamp again, and continue driving the rest of the screws, as shown in *Photo 4*.

Note: *The reason you drive in and back out the first four screws is to align the face frame so that the glue doesn't cause it to slip during clamping or screwing.*

We also found pocket-hole joints less cumbersome than nails in attaching the cabinet corner blocks, as shown in *Photo 5*. These blocks help square-up and strengthen the sides and back of the cabinet.

Continued

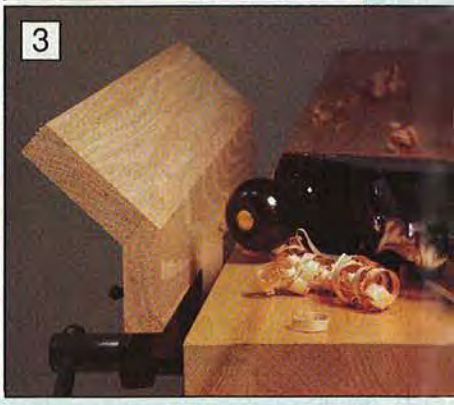
POCKET-HOLE JOINERY

Specialized joinery applications

Beveled miters

Typically, to make an octagonal box or to join any two workpieces at 45° along their length, you cut both pieces at 22.5°. With a pocket-hole joint, though, you cut one piece at 45° and leave the other at 90°. As shown in *Photo 1*, drill a few test holes in a scrap piece and drive a few screws to make sure that your screws won't come out on the front side of the workpiece. Once you've found the correct depth, drill your pocket holes every 4-6" along the inside edge of the 90° piece.

Align the two pieces of wood so that the inside edges meet at the bevel, but leave the outside edge of the 45° bevel long, as shown in the photo. Glue and screw the two pieces together, as shown in *Photo 2*. After the glue dries, simply plane or sand smooth the long edge of the bevel on the outside of the joint. *Photo 3* shows how this procedure hides the joint line better than a conventional miter.



Tips on selecting a pocket-hole jig

Pocket-hole jigs come in a variety of styles. But, not all the jigs we tested gave us the same results. Here's what to look for.

Hardened steel lasts longer

The guide hole in a pocket-hole jig should be made of harder metal than the bit. Otherwise, the tip or flutes of the bit may wear away the inside of the jig. Over time this will result in a poor fit between the guide hole and counterbore bit. This can cause the bit to wobble and the pilot end to break. Aluminum jigs with no bushings suffered from this problem in our tests. One solution is to use a non-fluted counterbore bit with carbide cutters, but in our experience these took longer to drill the holes.

Bit quality makes a difference

The quality of the counterbore bit also makes a big difference in the performance of your pocket-hole jig. To control the depth of the hole, manufacturers

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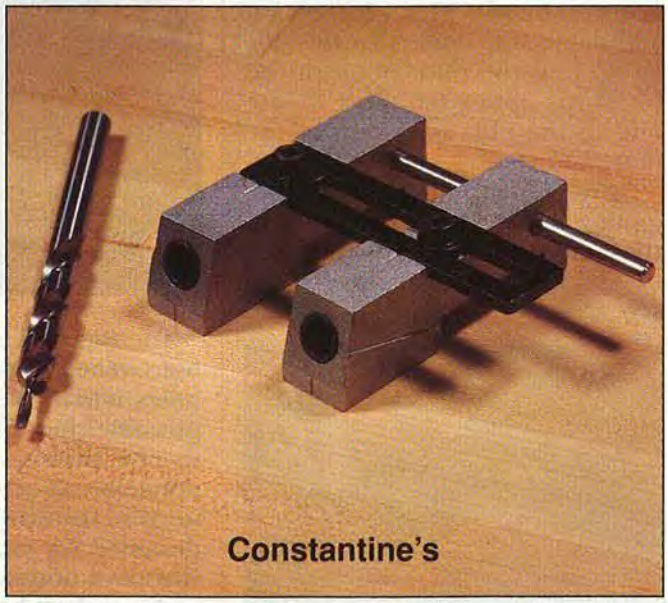
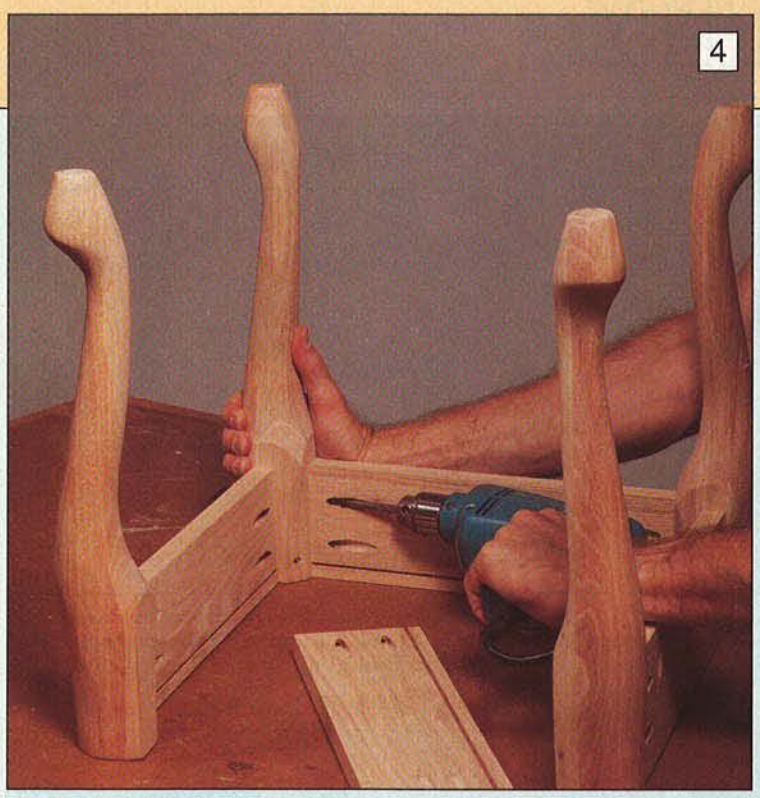
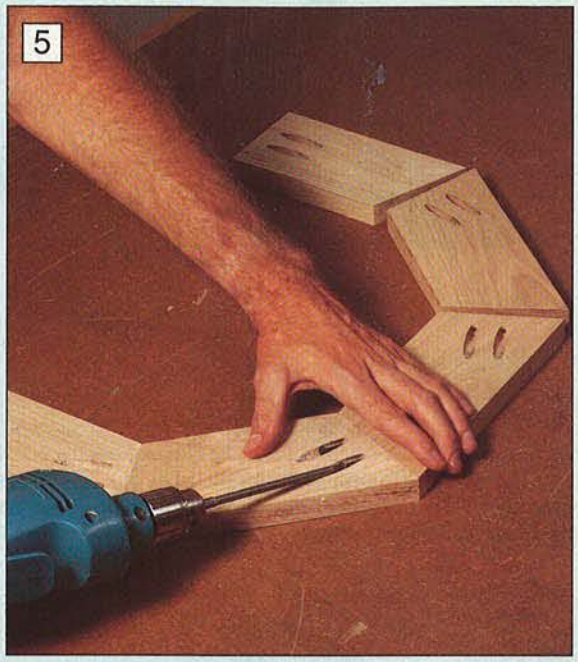


The spacing on these two guides can be adjusted by loosening a set screw on the top and sliding the guides back and forth. The steel bar at the rear helps keep the guides parallel.





Leg-to-rail joinery

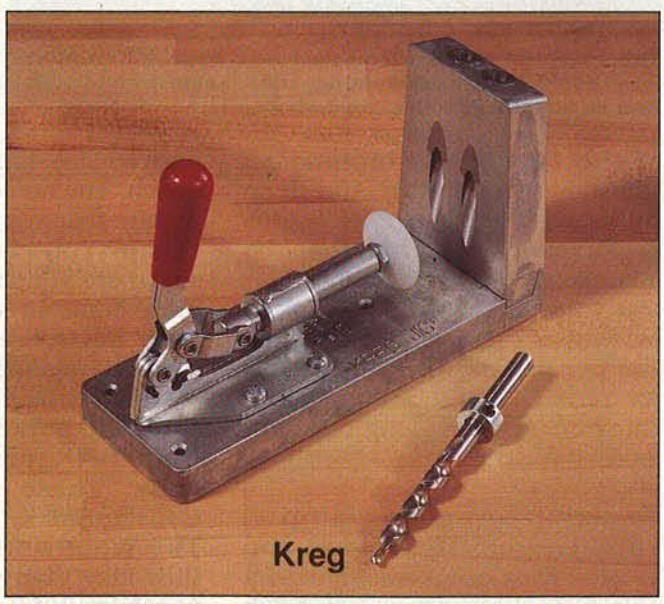
On small furniture projects such as the table in *Photo 4*, pocket-hole joints work just as well as dowels or mortise-and-tenon joints for fastening rails to legs. Just drill your holes in the rails, apply glue, align the mating surfaces, clamp, and screw.

Hard-to-clamp joints

If you're occasionally faced with a multi-sided project that requires substantial jigging to glue and clamp, the pocket-hole method can eliminate the need for an elaborate setup. The five-piece frame top shown in *Photo 5* was assembled in just a few minutes with nothing more than a little hand pressure to hold down the individual pieces.

Start by drilling pocket holes in one end of each piece. Then, just line up the workpieces and screw them together. The self-tapping screws hold the pieces tight.

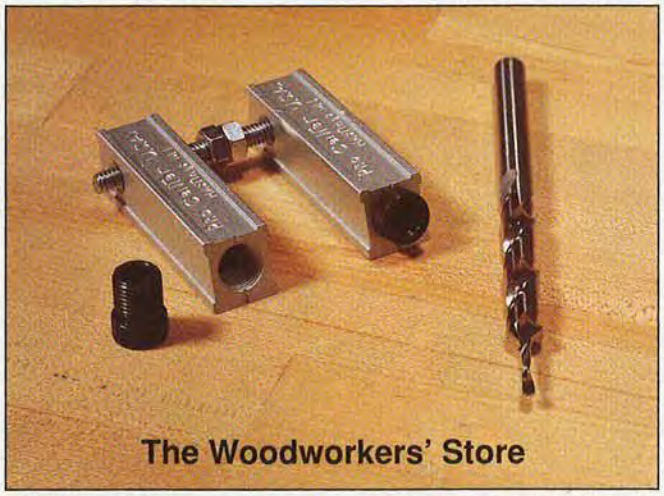
This single guide is made from hardened steel—no need for a bushing to guide the counterbore. The holes in the side allow you to bolt the guide to additional units.



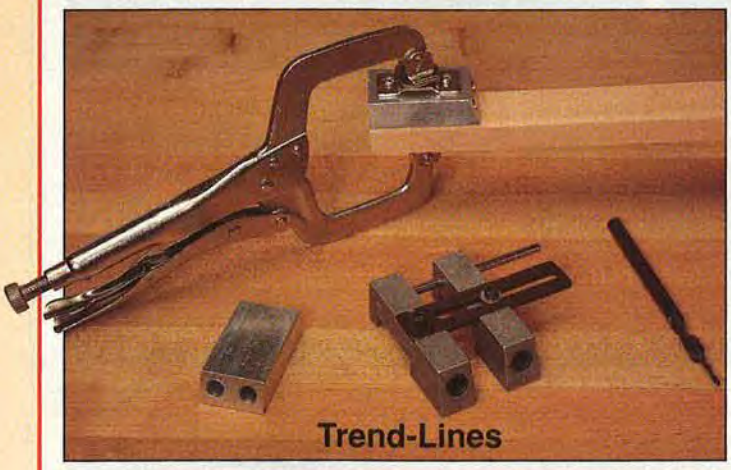
A toggle clamp on this model allows you to clamp the workpiece to the jig. Steel bushings run the full length of the guide. Holes in the jig enable you to screw it to a workbench.

POCKET-HOLE JOINERY

Welded to a set of locking pliers, this jig can be clamped directly to a workpiece. The hardened-steel guide needs no bushing, and the counterbore features a replaceable pilot.



This unit offers easily replaceable, screw-in bushings for three different size holes: ¼, 5/16, and ⅜". The spacing mechnism uses a threaded rod running through the two guides.



This company offers several models, a large self-clamping jig, a double-hole aluminum jig, and an adjustable double-hole jig that comes with a counterbore bit.

Woodcraft's pocket-hole system includes a single-hole aluminum jig, a counterbore bit with carbide cutters and a depth-stop collar, a Phillips-head driver, and screws.

of the better bits include an adjustable stop collar. And deep flutes with steep spiral angles help to clear wood chips from the hole. Some bits offer a pilot shaft that you can remove and replace by simply turning a hex screw. The non-fluted carbide-tipped bits we tested didn't always clear chips on jigs with long bushings or sleeves.

To clamp or not to clamp

The jigs from McFeeley's and Trend-Lines come welded to a pair of locking pliers for quick clamping action. The Kreg jig uses a toggle-type clamp and can be permanently mounted to a workbench. The non-clamping jigs only require that you supply your own clamp. You can position them anywhere you can place a clamp. They come in single- or double-hole units, and some can be threaded together in rows.

Adjustable jigs allow you to space the pocket holes anywhere from 1-4" apart, and come in pairs. These are offered by Constantine's, Trend-Lines, and The Woodworkers' Store, and they may save you some time if you have a frequent need for a joint with a wide space between the pocket holes.

Our recommendations

The Kreg jig outperformed its competition by a wide margin. It's rugged, versatile, and well-designed for high-volume, high-speed work. If you intend to do more than one or two pocket-hole projects, the Kreg is worth the investment. The jig from McFeely's took second place with its hardened steel body and easy-to-position locking pliers.

If you want just a single-hole model, look at the Eagle America jig. It also uses a hardened steel body, and the company's starter set gives you everything you need to get going for under $30.

COMPARING POCKET-HOLE JIGS

COMPANY	MODEL NAME/ CATALOG NUMBER (1)	GUIDE TYPE (2)	NUMBER OF GUIDES	BUSHING LENGTH (INCHES)	REPLACEABLE PILOT (YES, NO)	STOP COLLAR (YES, NO)	CLAMPING TYPE (3)	ADJUSTABLE SPACING (YES, NO)	SCREWS AVAILABLE (YES, NO)	OVERALL RATING (4)	PRICE (5)	COMMENTS
CONSTANTINE'S	PH70	A/B	2	1.5	N	N	NC	Y	N	7	$ 33.85	Adjustable guide sets up for variable spacing. Price includes counterbore bit.
EAGLE AMERICA	400-3199	HS	1	--	Y	Y	NC	N	Y	8	29.99	Starter set includes a hardened steel guide, counterbore bit with a stop collar, and screws. A bargain for the occasional user.
KREG	K2	A/B	2	2	N	Y	W	N	Y	10	123.95	The only jig that mounts to your workbench. Rugged and easy to use. Price includes counterbore bit with stop collar.
McFEELY'S	PH-1000 PH-9000	HS	2	--	Y	Y	LP	N	Y	9	75.90	Features include integral locking pliers, a counterbore bit with a stop collar, and a hardened steel guide. Durable and versatile.
TREND-LINES	DYSET	A/B	2	1.5	N	N	NC	Y	Y	7	24.90	Adjustable guides. Price includes counterbore bit. A good value for the money.
	DY12	A	2	--	--	--	LP	N	Y	6	16.90	Large locking pliers increase the versatility, but the aluminum guide is easy to gouge with bit.
	DY2	A	2	--	--	--	NC	N	Y	6	12.90	The lack of a bushing causes wear and tear on the aluminum guide.
WOODCRAFT	03W65	A	1	--	Y	Y	NC	N	Y	7	50.45	Includes a guide, carbide bit, driver, and screws. Aluminum guide held up better than other aluminum models.
THE WOODWORKERS' STORE	90481 90803	A/B	2	.75	N	N	NC	Y	Y	7	35.85	Screw-in bushings enable you to use different size drill bits. Price includes the counterbore bit.

NOTES:
1. Where two numbers are listed, first number indicates guide and second number indicates drill bit.
2. (HS) Hardened steel (A) Aluminum (A/B) Aluminum with steel bushing
3. (LP) Locking pliers (W) Workpiece clamps to jig (NC) No clamp
4. From 1 to 10 with 10 being the highest score.
5. Includes postage.

Manufacturers' telephone listing:

Albert Constantine & Son, Inc., 800/223-8087.

Eagle America, 800/872-2511.

Kreg Tool Co., 800/447-8638.

McFeely's, 800/443-7937.

Porter-Cable, 901/668-8600.

Trend-Lines, 800/887-3338.

Woodcraft, 800/225-1153.

The Woodworkers' Store, 800/279-4441.

The top photo displays the difference between the short, straight pocket hole made by a conventional jig and the longer, curved hole made by the motorized Porter-Cable model.

Something new—a motorized model from Porter-Cable

The model 550 Pocket Cutter from Porter-Cable works like a swinging router. You align the board on the baseplate, lock it in place with a cam clamp, and lower the hinged motor and bit into the wood to create a pocket.

The advantage: you get a flat trajectory for your screws. This means there's no chance that your screw will pop out of the front of your mating piece of wood since the screw travels parallel with the surface of the board.

But there are disadvantages, too. After routing your pocket, you have to walk around to the other side of the workpiece and drill the pilot holes as a separate procedure. Plus the pocket measures 4¼" long—a big gash even if it is hidden from view.

Give the price (around $200), the benefits of this machine may be more suited to production shops or home woodworkers who intend to do a lot of repetitive pocket-hole work.

If you've been furniture shopping lately, you know that wall mirrors don't come cheap, especially those encased in a quality hardwood frame. With this in mind, we set out to create a great-looking mirror that's easy on the pocketbook. We hope you agree that we accomplished our two objectives. And guess what? We machined, assembled, and finished this beauty in seven hours and used off-the-shelf 12" squares to keep the price down. What are you waiting for?

Note: *The instructions and Bill of Materials are for building six inner frames and then edge-joining them to form one large six-panel mirror as shown in the photo* above. *You'll need to make changes accordingly if you plan on making a mirror with more or fewer than six inner frames.*

MAGNIFICENT MODULAR WALL MIRROR

Cut and rout the stock for the six inner frames

1 Rip and crosscut six pieces of ½"-thick walnut to ⅞" wide by 58" long for the outside members (A) of the inner frames.

2 Cut or rout a 1/16" chamfer along one edge of each 58"-long piece where shown on the Full-Sized Section View detail accompanying the Inner Frame drawing *below*.

3 Cut six pieces of ¼" maple to 1" wide by 58" long for the inner frame middle members (B).

4 Using a table-mounted router and a fence, rout ⅛" round-overs along one edge of each B to form a ¼" bullnose like that shown on the detail *below right*.

5 Cut six pieces of ¼" walnut to 1" wide by 58" long for the inner frame inside members (C).

6 Tilt your tablesaw blade, and bevel-rip one edge of each 58"-long C strip at a 45° angle for a ⅞" finished width as dimensioned on the Section View detail.

7 Finish-sand all strips; it's easier to sand the strips now than after they've been glued face-to-face.

Assemble the inner frames, and cut the rabbet

1 With the back edges flush, glue and clamp three strips (A, B, C) together for each inner frame in the configuration shown on the Section View detail. Immediately wipe off any excess glue with a damp cloth. Take your time and do a thorough job when removing the excess glue. It's much harder to remove after it has dried. Repeat the gluing, clamping, and excess-glue removal to form the other five A, B, C laminations.

2 Cut a ⅜" rabbet 5/16" deep along the inside back edge of each lamination. See the drawing titled Rabbeting An Inner Frame on the *following page* for reference.

3 Miter-cut four 13½"-long sections from each 58"-long laminated strip. (We cut the miters on our tablesaw, and clamped a stop block to the miter-gauge extension for consistent lengths.) Hold four frame members together. The rabbeted opening for the mirror should measure ⅛" larger than

Continued

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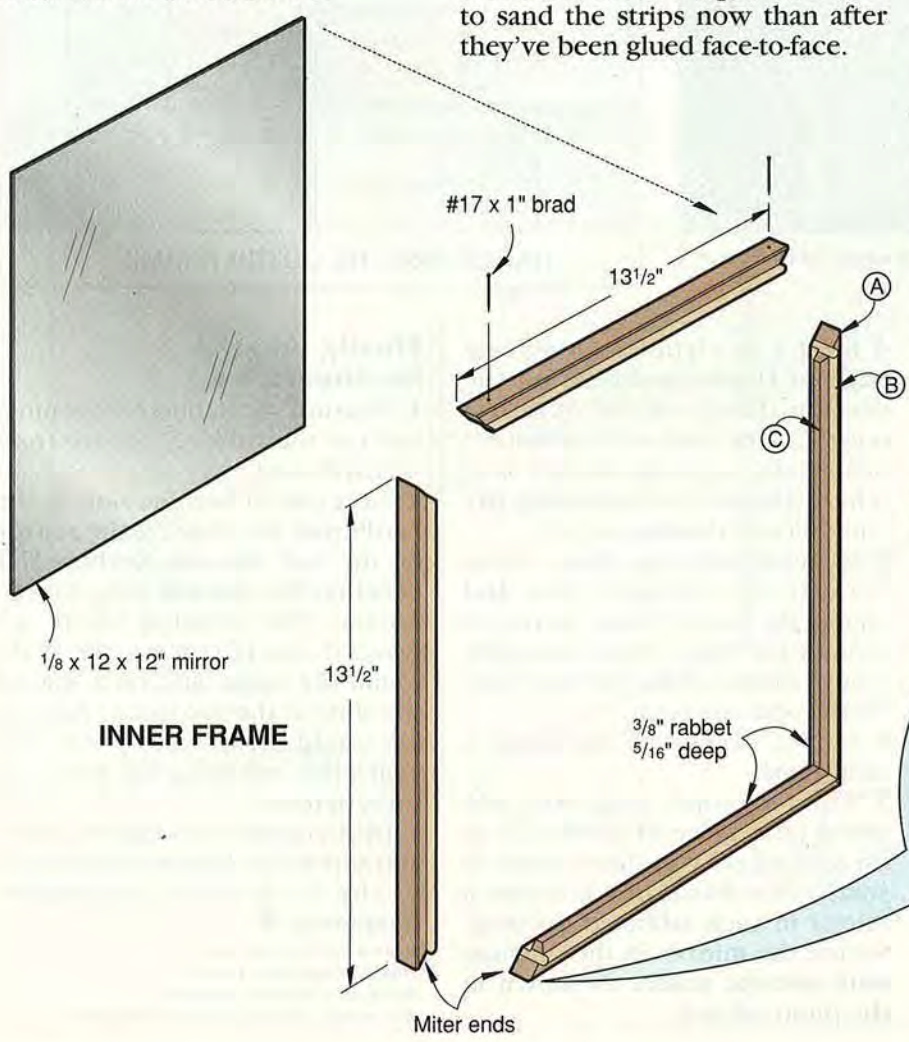
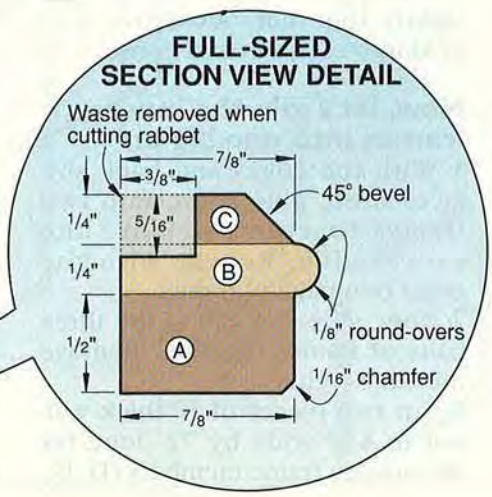
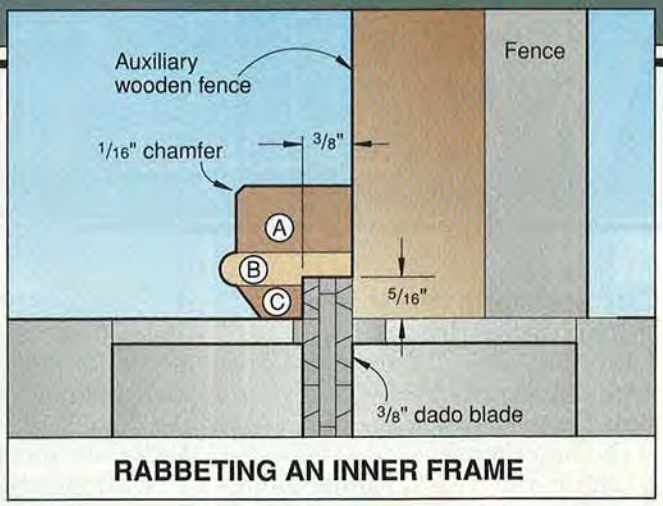


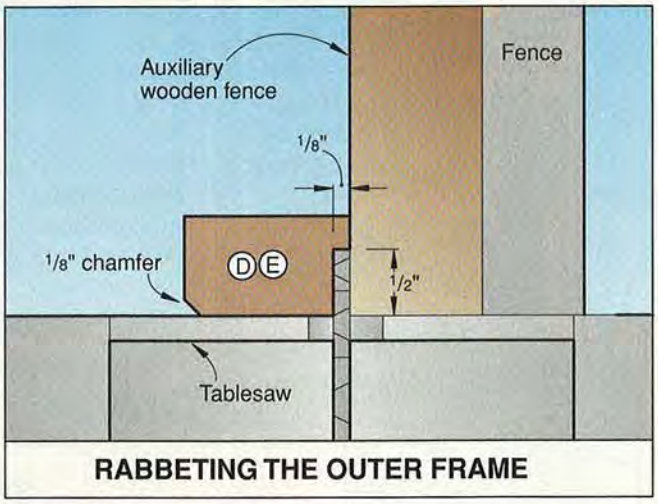


WALL MIRROR

Apply a bead of silicone sealant around all edges of each mirror to hold them in place.



RABBETING AN INNER FRAME



RABBETING THE OUTER FRAME

the 12"-square mirror. If the mirror fits tight, any contraction of the wood later can cause the mirror to crack.

4 Glue and clamp four 13½"-long sections to form each inner frame. (To help hold the frame pieces tightly together, we drove a 1" brad into each mitered corner.)

Now, let's join the inner frames into one big unit

1 With the edges and back surfaces flush, glue and clamp two frames together. Remove the excess glue. Repeat with the other two pairs of frames.

2 Now, glue and clamp the three pairs of frames together. Remove the excess glue.

3 Cut two pieces of ¾"-thick walnut to 1¼" wide by 72" long for the outside frame members (D, E).

4 Rout a ⅛" chamfer along one edge of D where shown on the section detail on the *opposite page*. Cut or rout a ⅛" rabbet ½" deep along one edge of each strip where shown on Rabbeting the Outer Frame drawing *above*.

5 Miter-cut the outer frame members (D, E) to length. Glue and clamp the outer frame members around the inner-frame assembly where shown in the Section View on the *opposite page*.

6 Sand if necessary, and apply a clear finish.

7 With the project lying front side down on a piece of cardboard or on a blanket (you don't want to scratch the finish now), center a mirror in each rabbeted opening. Secure the mirrors in the opening with silicone sealant as shown in the photo *above*.

Finally, add the hardboard back

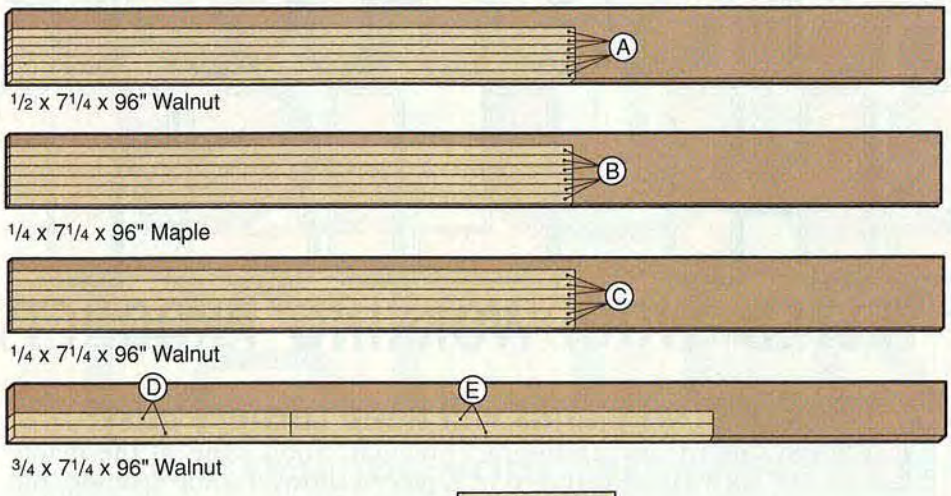
1 Measure the rabbeted opening, and cut the back (F) to size from ⅛" hardboard.

2 Cut a pair of keyhole slots in the hardboard for hanging the mirror on the wall. See the Keyhole Slot detail on the *opposite page* for reference. (We decided where we wanted our mirror on the wall, found the studs, and then spaced the slots in the hardboard back so we could drive screws into the wall studs, and hang the mirror on these screws.)

3 Drill countersunk screw holes, and screw the hardboard back (F) to the back of the assembled framework.

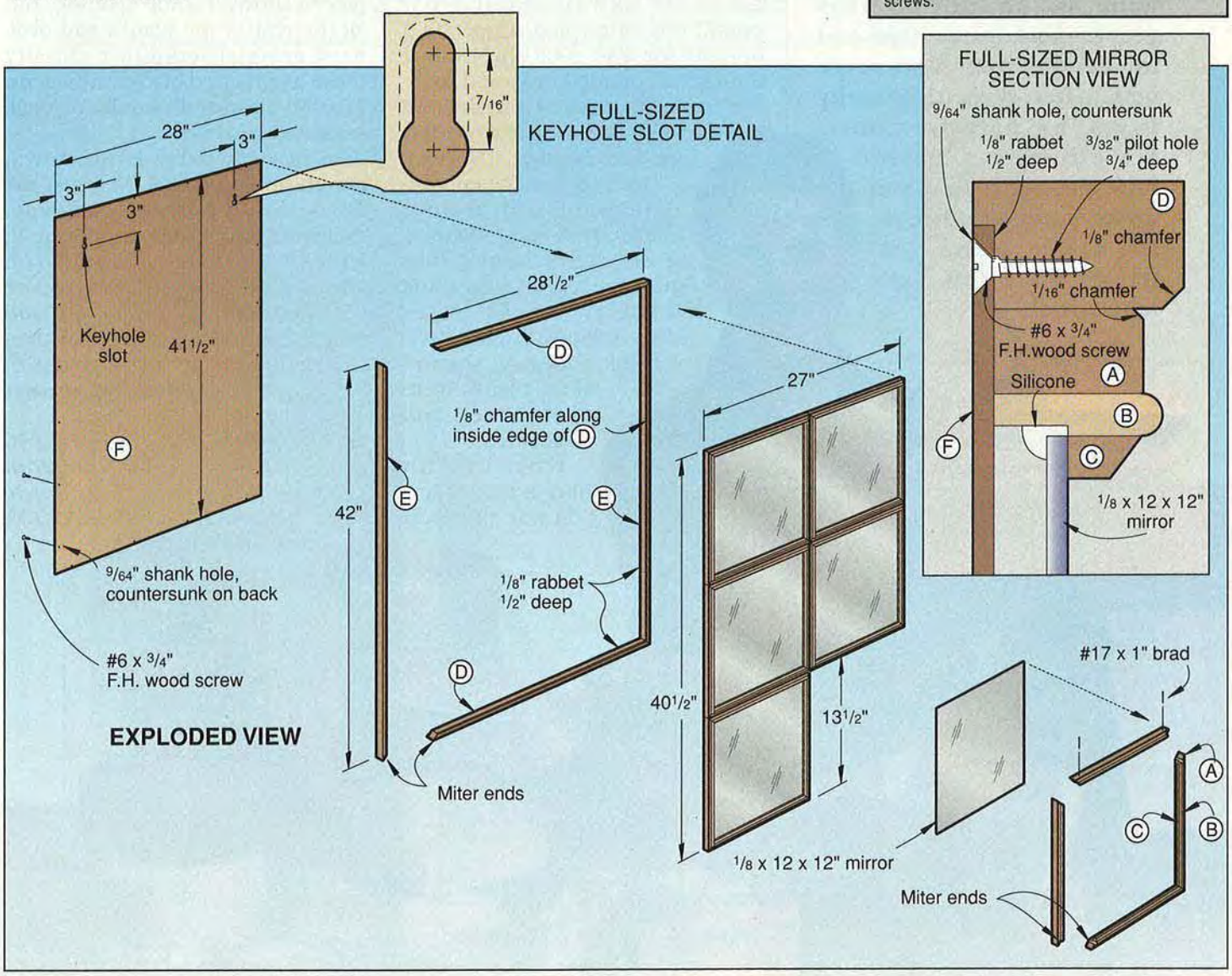
Written by Marlen Kemmet
Project Design: Larry Clayton
Illustrations: Roxanne LeMoine
Photographs: King Au; John Hetherington

CUTTING DIAGRAM



Bill of Materials					
Part	Size T	Size W	Size L	Material	Qty.
Initial Size (enough for six inner frames)					
A	½"	⅞"	58"	Walnut	6
B	¼"	1"	58"	Maple	6
C	¼"	1"	58"	Walnut	6
Finished Size					
D	¾"	1¼"	28½"	Walnut	2
E	¾"	1¼"	42"	Walnut	2
F	⅛"	28"	41½"	Hardboard	1

Supplies: 6–12"-square mirrors, #17x1" brads, silicone, clear finish, #6x¾" flathead wood screws.



WOOD® MAGAZINE'S WORKSHOP WISH LIST

12 GREAT SHOP-TESTED WOODWORKING PRODUCTS

What's new? We're glad you asked. We looked far and wide to round up this year's most innovative and impressive tools and products. After screening many items, we narrowed our selection to a dozen new products that can make your woodworking easier, faster, better, or more fun. Let's take a look.

1 Box of bowl blanks will keep turners busy

When one of our photographers told us about a 65-pound box of turning blanks he'd bought for $30 plus shipping, I thought it sounded too good to be true. But I ordered a box from Johnson Wood Products, and sure enough, it's true.

The box I received contained nineteen walnut blanks, five maple blanks, seven cherry blanks, four butternut blanks, and three hackberry blanks. Sizes ranged from roughly 1-3" thick and 4-8" square. All the blanks were sealed well and defect free.

What I didn't find in this collection was any spectacular wood. One of the maple pieces showed some spalting, but all the rest of the blanks had ordinary grain. I wouldn't classify these as practice blanks, however. They're all useful chunks of well-seasoned hardwood.

From Strawberry Point, Iowa, the shipping on this box cost me $8. According to the company, the most expensive shipping bill, UPS to California, would run about $25. That still leaves the cost per blank at around $2, and you can't find a better deal than that on hardwood turning blanks.

—Tested by Marlen Kemmet

Box of mixed bowl blanks, $30 plus shipping. Available from Johnson Wood Products, Route No. 1, Strawberry Point, IA 52076. Call 319/933-6504.

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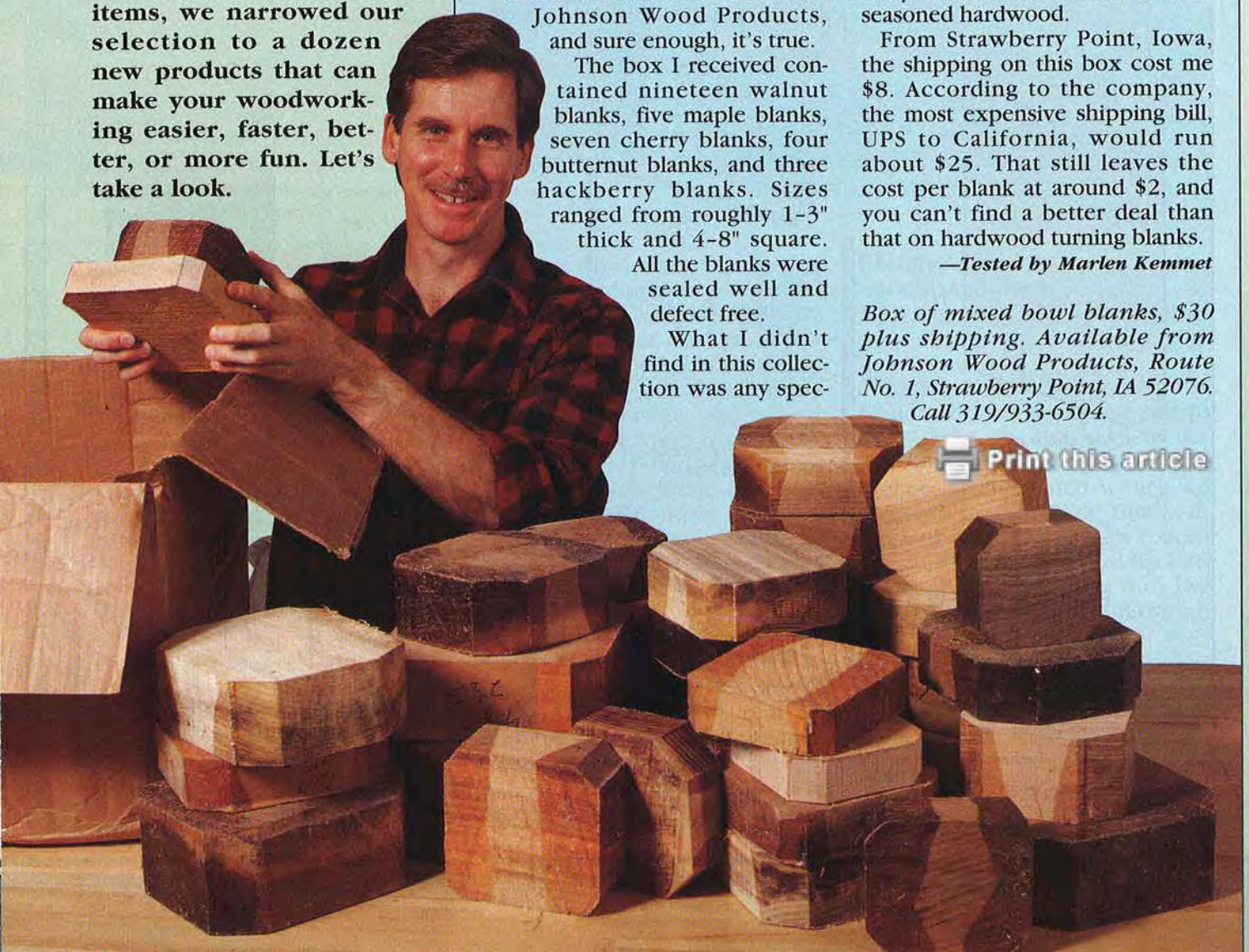


2 Benchtop bandsaw delivers big-tool power

For those of you who are looking for a two-wheel bandsaw, but don't have a lot of shop space, this new 10" benchtop bandsaw from Dremel could prove to be just the ticket. You can move and store it easily, yet the 6-amp, ½-hp design compares favorably with larger bandsaws.

The machine offers two speeds—900 feet per minute and 3,000 fpm. Use the higher speed for cutting wood and the slow speed for non-ferrous metals (like aluminum and brass) and plastics.

You can use blades from ⅛-½" wide on this model. With the tracking knob I found that I can move the blade fractions of an inch, and the blade remains where I leave it. The guides adjust easily, and the machine will resaw stock up to 7" thick.

Dremel included a lot of user-friendly features on this saw such as a 2½" dust-collection port and a mount where you can hang a gooseneck lamp. The suggested list price is $588, but mail-order prices go as low as $388. This saw would make a great first bandsaw for beginning and intermediate woodworkers, and a good addition to any shop where portability rates high among needs.

—Tested by Bob McFarlin

Dremel model 1120 Bandsaw, Available in stores and catalogs. Dremel Corporation., 4915 21st St., Racine, WI 53046. Call 800/437-3635, ext. 2.

3 Random-orbit sander doesn't spin out when lifted from work

Several years back, manufacturers of electric random-orbit sanders changed the way woodworkers sand. But all the early models share the same problem. They start spinning like a disc sander—not in a random-orbit pattern—when you take pressure off the pad. You have to turn the sander off and wait for it to stop before lifting it off the work surface.

DeWalt eliminated this problem with the DW421 random-orbit sander. When you lift it up, a disk between the pad and the body of the sander slows the pad down from 12,000 rpm to within 500-1,000 rpm. You can pick it up and set it down on the work surface with complete control.

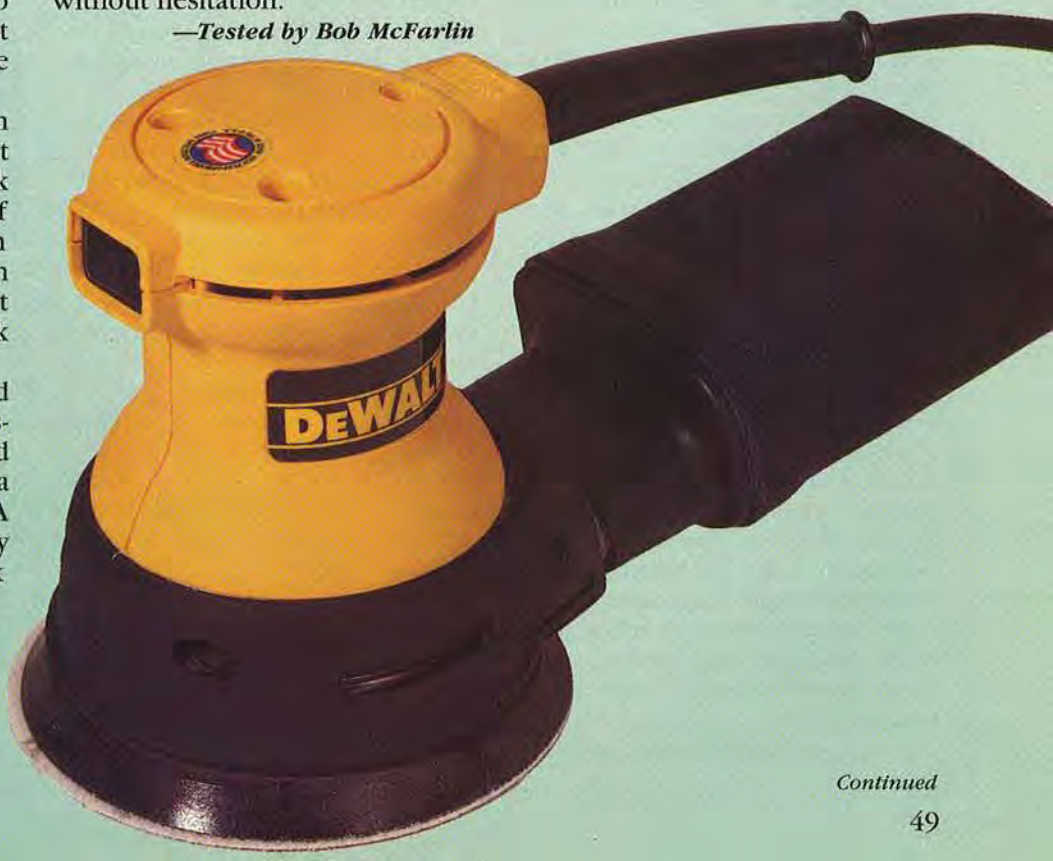
With its 2-amp motor, I found that the DW421 sanded aggressively. Vibration felt minimal, and the low-profile design provided a good grip and steady control. A 10' cord means that you'll rarely need an extension cord to work with this tool.

The pad takes 5"-diameter sanding discs and a fan pulls sawdust through the holes in the sanding discs and into a porous plastic container. DeWalt offers models for both hook-and-loop and pressure-sensitive-adhesive (PSA) sandpaper.

I've stayed away from the other random-orbit sanders because of the aforementioned problems. But I found this sander a pleasure to work with, and I recommend it without hesitation.

—Tested by Bob McFarlin

DeWalt DW421 random-orbit sander, about $90. Available in woodworking catalogs and stores, or contact DeWalt Industrial Tool Company, P.O. Box 158, 626 Hanover Pike, Hampstead, MD 21074. Call 800/433-9258.



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WISH LIST

4 Resaw blade makes tricky bandsaw cuts easier

Using your bandsaw to resaw wood gives you great-looking bookmatched panels, or lets you cut thinly sliced stock for delicate projects. But if you bury a narrow blade in a deep cut, the blade may wander from the cut line.

To solve this problem, Highland Hardware developed the Wood Slicer bandsaw blade. This ½"-wide blade employs just 3 teeth per inch and a wider-than-normal tooth set. The tooth set and spacing gives the blade enough room to clear debris efficiently without clogging or overheating.

I used this blade on a 14" Delta bandsaw with a 6" height attachment, and resawed hard maple, walnut, Honduras mahogany, and oak ranging from 2½" to 10" thick. The Wood Slicer blade cut so aggressively that I wouldn't recommend it for stock less than 3" thick.

Compared to other blades I've used for resawing, however, the Wood Slicer left a much smoother surface. This blade doesn't make resawing foolproof, but it does make it easier and much more controllable. I appreciate this when I'm trying to coax a beautiful bookmatched figure out of a prized piece of wood.

—Tested by Don Mostrom

Wood Slicer bandsaw blade, in lengths from 72 to 124", $33.90 ppd.; custom lengths, $39.90 ppd. Highland Hardware, 1045 N. Highland Ave. N.E., Atlanta, GA 30306. Call 800/421-6748.

5 Digital tape measure ends guesswork

Fess up. How many of you look at your tape measure and think something like: "21¾" and two little marks." If that sounds like you, this new tape measure from Starrett may improve your accuracy and layout skills. Dubbed the DigiTape, it features a heavy-duty plastic case, steel belt clip, and a 1"-wide tape. But that's where the similarities between this and any other tape measure end.

On top of the case, a digital readout window sits next to three buttons. The first button zeros the readout for incremental measurements. For example: you need to lay out a row of marks that are exactly 6¼", 9⁷⁄₁₆", and 12½" apart. Simply pull the tape out to 6¼", make your mark and push the button—the window now reads zero. Now, pull the tape out to 9⁷⁄₁₆", make your mark and zero it again. Finish up with a mark at 12½".

The second button gives inside and outside measurements from the front (push once) or back of the case (push twice). I found this a big help in measuring inside cabinets and boxes.

You get three functions from the third button. The first setting gives you feet and inches, the second converts measurements to all inches, and the third button converts inches and feet to the metric scale. On the front of the case, a red memory button keeps your most recent measurements flashing in the window until you press it again.

The tape only registers movement in increments of ⁄₁₆". Otherwise, I think this is one of the best tools to come along in years. It's fast and versatile, and it really helps on complicated layouts.

—Tested by Bob McFarlin

Starrett 25' DigiTape, about $30. Available in woodworking stores and catalogs or contact The L.S. Starrett Co., 121 Crescent St., Athol, MA 01331-1915. Call 508/249-3551.

Nut drivers, set of five, $20.
Quick-change chuck (replaces standard drill chuck), $17.
Countersink drill bits, set of five, $27.
Countersink, $11.
Twist bits, set of seven, $36.
Quick-change chuck (for screwguns), $14.
Regular quick-change chuck, $12.
Drill guides, set of five, $40.
Brad-point bits, set of seven, $41.
Large hex-shank brad-point bits, set of four, $28.
6" shank extension, $7.

6 Insty-bit system beefs up its arsenal of quick-change accessories

Insty-Bit quick-change chucks and drill bits allow you to change bits and drivers in a portable electric drill in about three seconds. Just pull back on the spring-loaded locking collar, remove or replace the bit, and the locking collar snaps back in place. No need to fuss with a chuck key.

Since I first started using this system five years ago, the company has added a variety of new products to round out the line as shown in the photo *above*. You can purchase all of these bits as sets or individually. (Prices in the captions are approximate.)

Over time, I have discovered that the countersinks with the adjustable stop collars get the most use in my shop. It's a real treat to countersink a hole and drive the wood screw without the hassle of finding and using the chuck key every time. I'm also impressed with the new drill guides. These guides automatically center your drill bit for drilling pilot holes for hinge screws and hardware installation.

Once you buy an Insty-Bit chuck, you should be able to stay within their product line for most of your drilling needs. And you can count on enjoying substantial improvements in the speed and ease with which you use a drill.

—Tested by Bob McFarlin

Insty-Bit Quick-Change System. Available in woodworking catalogs and stores, or contact Insty-Bit, 3336 Idaho Ave. So., Minneapolis, MN 55426. Call 800/426-2732.

Continued

WISH LIST

7 High-quality hand planes need no tune-up

Many woodworkers avoid hand planes because of the hours of labor that go into flattening the sole and sharpening the blade. That's why I was pleased to find that these well-made planes from Lie-Nielsen Toolworks require no tune-up at all.

With its 5" cast-bronze body, the low-angle block plane fits comfortably in your hand. This tool enabled me to produce paper-thin shavings with no chatter or resistance when planing end grain. It works great on the ends of mitered picture frames and dovetail or finger joints that stand proud of the mating surface.

The design of the low-angle jack plane is based on the old Stanley #62 plane. This handsome piece, with a cast-iron body, bronze cap iron, and cherry handles, also smooths end grain. The massive 2"-wide blade and adjustable throat opening work best on big projects such as planing end-grain butcher blocks.

The design of scrub plane takes after the Stanley #40. Although not the fault of the tool, I found the work of scrub planing slow and strenuous. But if you have the muscle and patience, you can use this plane to thickness a workpiece in a hurry, or produce a decorative rough-hewn surface.

—Tested by Matt Ver Steeg

Low-angle block plane, $75; low-angle jack plane, $165; scrub plane, $85. (Prices don't include shipping.) In woodworking catalogs and stores. Lie-Nielsen Toolworks, Inc., Rt. 1, Warren, ME 04864. Call 207/273-2520.

8 Sears radial drill press covers all the angles

With a conventional drill press, if you want to drill a hole at an angle (say to fit the legs in the bottom of a stool or a Windsor chair seat), you normally have to tilt the table. But holding or clamping a workpiece on a slanted surface can cause all sorts of problems and headaches. On a radial drill press, the head tilts so you can bore angled holes easily, but you'll find few of these machines on the market. Sears has come to the rescue with this new 34" Radial Drill Press.

The 34" figure refers to the 17¼" throat that enables you to drill to the center of a 34" panel. The large throat opening is nice, but it's the radial aspects of this drill press that really make it swing.

The head tilts 90° to the left and 45° to the right. One quick adjustment allows you to drill at any angle between these two fixed stops. By rotating the head to 90° you also can run a drum sander, flap sander, or buffing attachment at a comfortable working angle.

The head of the machine also rotates 360° in a horizontal plane around the column so that you can drill into the top of a tall workpiece placed on the floor. Capacity is only limited to how high you can place the chuck, and the length of the quill travel, which measures 3⅝".

A knob-operated rack-and-pinion gear moves the chuck end of the head toward or away from the column with ease and micro-fine precision. The full length of travel measures 12¾".

Adjustable pulleys give this drill press five speeds, from 540 to 3,600 rpm. I tried the slower speed with a 2" Forstner bit and the higher speeds with a sanding drum, and found the performance very good. The 2⁵⁄₁₆"-diameter table- and head-tubes give the machine some heft and a nice solid feel when drilling.

The ½-hp motor proved adequate for drilling in all types of wood. For drilling in steel I'd prefer a bit more horsepower. I don't consider this a drawback, however, unless you intend to use this tool to do a lot of metalwork.

During testing, I noticed a lot of small details that indicate the manufacturer has thought carefully about the design. The depth gauge on the head is easy to set and read, and very accurate. Likewise, I found the angle gauge, indexed to a groove on the column, accurate and readable. A positive stop at 0° eliminates the hassle of realigning the head. Other nice features include a removable on/off switch, a slot at the back of the table for storing the chuck key, and a template for making your own auxiliary table.

If you're in the market for a drill press, I recommend this one. I like the price and the quality of the tool, and the versatility will open up a lot of new possibilities in your woodworking.

—Tested by Dave Henderson

Sears Craftsman 34" Radial Drill Press, about $300, at Sears stores nationwide.

9 Smaller, lighter, stronger—this drill sets new standards

Cordless drills just keep evolving, and this new 12-volt Panasonic Predator, sits right on top of the food chain. It's smaller than other 12-volt models, and yet it's big in performance.

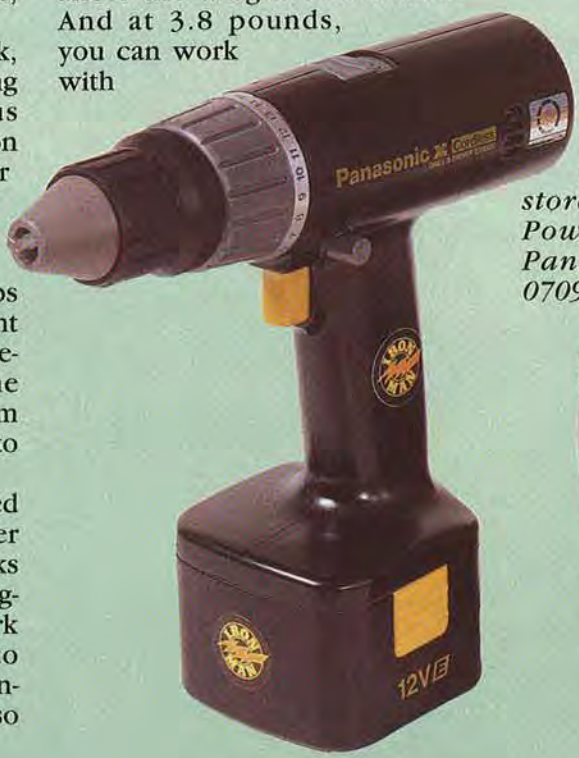
With the Predator's battery pack, you get 40 percent more running time than from the previous Panasonic batteries, and that's on a 15-minute recharge. A timer protects the batteries from overcharging, and results in a longer life for the battery pack.

The 2-speed gear box develops plenty of torque, and 22 different clutch settings enable you to precisely control the depth of the screws you set. Speeds range from 50–350 rpm on the low setting, to 180–1,300 rpm on high.

When using the Predator, I liked the comfortable grip and trigger switch. An electronic brake kicks in as soon as you let off of the trigger, and this allows you to work much faster than if you had to wait for the chuck to stop spinning. The ⅜" keyless chuck also saves time because you can go from fully open to fully closed in 4¾ revolutions.

A T-handle design nicely balances the weight of the drill. And at 3.8 pounds, you can work with this tool for hours without fatigue. I haven't found a drill to date that I like as much as this one, and I give it two thumbs up.

—Tested by Dave Henderson



Panasonic Predator Cordless Drill, Model EY6100EQK, with battery pack and carrying case, about $220. Available in catalogs and stores, or write to Panasonic, Power Tool Dept. 4A-3, One Panasonic Way, Secaucus, NJ 07094. Call 201/392-6655.

Continued

WISH LIST

10 Portable lumber mill goes with you into the woods

After years of wanting to harvest and mill my own wood, I recently tried out this Ripsaw Portable Sawmill. And now I'm hooked!

This sawmill cuts logs up to 20" in diameter and can be carried by a single individual. It works like a horizontal bandsaw and uses a ¾" bandsaw-like blade with 3 teeth per inch. The aggressive tooth design allows you to cut straight, flat boards as thin as ⅛". The blade tracks on two 10" aluminum wheels held in place by a tubular aluminum frame.

A gas-powered model #044 Stihl chainsaw motor runs the saw. If you want to save money, you can order one of several smaller motors from the Stihl lineup, or install your own Stihl saw motor.

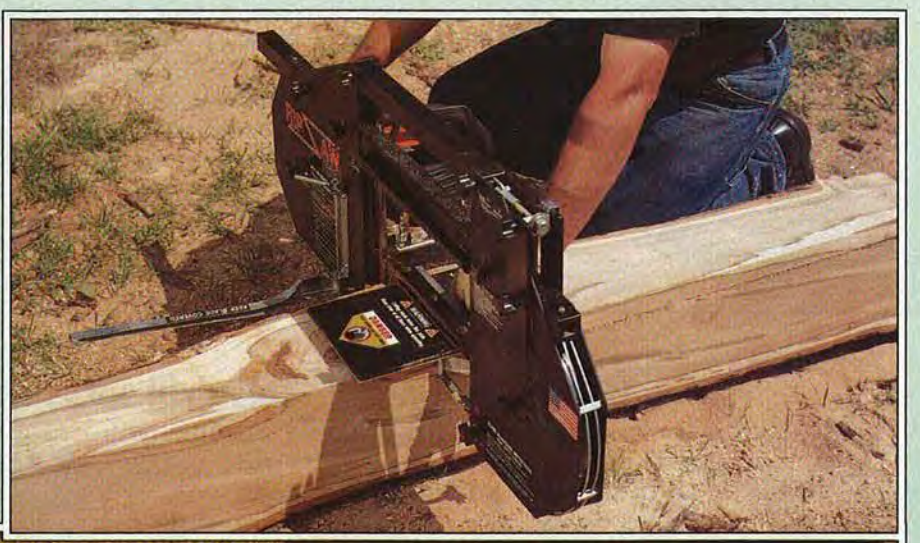
The Ripsaw cuts logs flat and straight by riding on top of a 2"×6"×5'-3" aluminum slabbing rail that you attach to the log. For longer logs, you can connect two or more slabbing rails. The slabbing rails cost $54 each, and I used two throughout my tests.

Once you've slabbed off the top of a log, you rotate it 90° and cut off another slab to create a square edge to work against. Then, take off the slabbing rail, set the blade depth to the desired board thickness, engage the motor, and push the saw's platen along the surface you've already cut.

The only difficulty I experienced was getting a feel for the proper handling. The saw weighs only 45 pounds, but it's heavier on the motor end, and you have to balance it carefully on the slabbing rail to get a good cut. Once I got the hang of it, however, I cut clean, flat boards all day long.

—Tested by Dave Henderson

Ripsaw Portable Sawmill, prices from $1,649, as tested $1,974. Better-Built Corp., 845 Woburn St., Suite 3, Dept W07/08, Wilmington, MA 01887. Call 508/657-5636.



11 Machine speeds mortise cutting

If you cut a lot of mortises, then you know that handwork gets old quickly. Grizzly Imports now offers a solution: the model G3183 hollow-chisel mortiser.

Sized to fit on a benchtop, this tool's cast-iron base and headstock, and 1⅞"-diameter steel column give it the stability and feel of a stationary power tool. Add to that a ½ hp, direct-drive induction motor, and you've got a rugged, no-nonsense package.

A material hold-down on the fence secures stock up to 4¼" thick. And the fence travels up to 3⅛" away from the center point of the chisel. Once you've positioned your stock, the 16" handle gives you plenty of leverage for bearing down into dense woods. Riding on a rack-and-pinion gear, the head travels with smooth precision. And in my tests, the adjustable depth stop gave me accurate results.

This hollow-chisel mortiser comes complete with the necessary small parts: allen wrenches, a chuck extension, a chuck key, and two adapter bushings for ¾"- or ⅝"-shank chisels. And the manual provides thorough, easy-to-read instructions.

You need to purchase the hollow chisel separate from the mortiser. Grizzly offers six chisels in different sizes priced from $10-$12 each. The widths on these chisels range from ¼"-⅝". The chisel I tried came razor sharp and gave me excellent results.

—Tested by Dave Henderson

Grizzly Model G3183 Hollow-Chisel Mortiser, $225 plus shipping. Grizzly Imports, P.O. Box 2069. Bellingham, WA 98227. East of the Mississippi call 800/523-4777. West of the Mississippi call 800/541-5537.

12 Adapter kit ends scrollsaw blade-changing hassle

For a long time, I hated to use plain-end blades with my scrollsaw. Those little blade holders spoiled the fun. When spaced as far apart as the saw's instructions required, the blade holders were so close to the blade ends that they could seldom get a good grip.

Inserting a plain-end blade through a start hole for an inside cut always proved frustrating and time-consuming. If I couldn't use a pin-end blade, I figured, forget it. This was unfortunate because you can't cut many patterns without using the finer sizes of plain-end blades.

Installing the E-Z Set Bladeholder System on my AMT 4601 scrollsaw changed all that. Now, I no longer fear plain-end blades, no longer shy away from tiny inside cuts, and no longer dread changing a blade.

The kit features a chuck-type blade holder that bolts to the saw's upper arm. Mounting a plain-end blade is a breeze with the new setup—just slip the end in between a pair of steel plates and tighten a wing nut. The upper mount can be flipped over to accommodate pin-end blades, too.

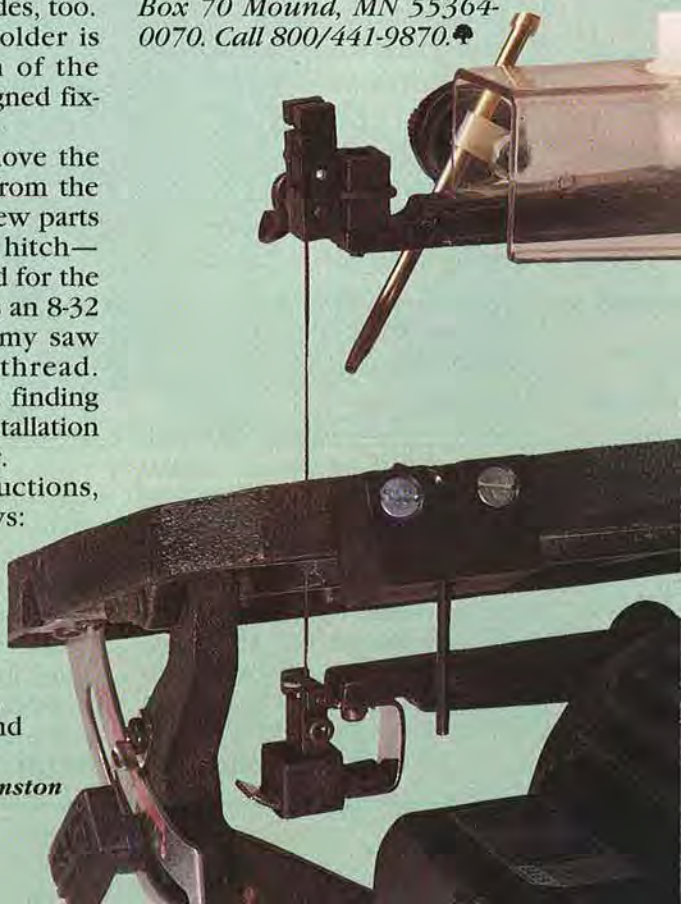
A separate clamp-on holder is still used at the bottom of the blade. It fits into a redesigned fixture on the lower arm.

To install, you just remove the old stamped-steel hooks from the arm ends and screw the new parts in place. There was one hitch—the longer screw furnished for the upper chuck assembly has an 8-32 thread, but the hole in my saw arm has an M4 metric thread. Even with the time spent finding the proper screw, the installation took less than half an hour.

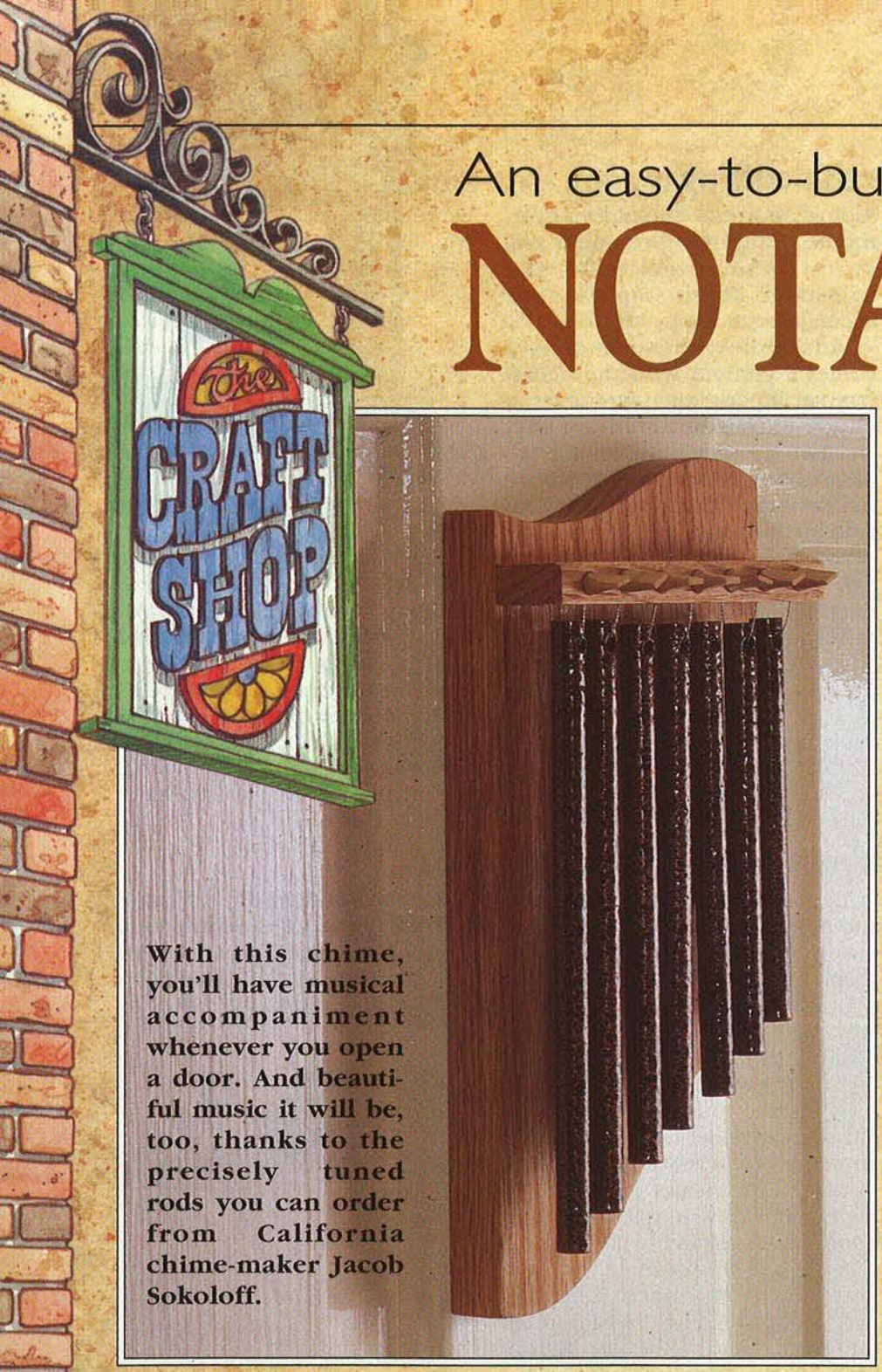
According to the instructions, the kit fits these 16" saws: AMT 4601 and 4602, Central Machinery S5909, Dremel 1671 and 1695, Northern Hydraulics SS16, Reliant DD66 and DD67, Ryobi SC160, Sears/Craftsman 23611 and 23612, and Skil 3330.

—Tested by Larry Johnston

E-Z Set Bladeholder System, $40.80 ppd. Available from Meisel Hardware Specialties, P.O. Box 70 Mound, MN 55364-0070. Call 800/441-9870.



An easy-to-build chime that NOTABLE



With this chime, you'll have musical accompaniment whenever you open a door. And beautiful music it will be, too, thanks to the precisely tuned rods you can order from California chime-maker Jacob Sokoloff.

***Note**: You'll need ⅛" and ½" hardwood for the door chime. We used oak.*

Cut two pieces of ⅛"-thick stock and one piece ½" thick to 4⁵⁄₁₆×9½". Photocopy the full-sized pattern in the *WOOD PATTERNS™* in the middle of the magazine. Adhere the pattern copy to one of the ⅛"-thick pieces with rubber cement or spray adhesive. Center the pattern lengthwise on the stock.

Stack the patterned piece on top of the ½"-thick piece. Align the edges and ends. With your drill press, drill a ¼" hole through both pieces at the centerpoint marked on the pattern. Separate the pieces. Chuck a 2⅜" holesaw into the drill press. Then, piloting on the ¼" hole, bore through the patterned piece only. Change to a 2⅞" holesaw, and similarly bore through the ½" piece.

Stack the three pieces, placing the ½"-thick piece between the thin ones, the patterned part on top. (See the Exploded View drawing.) Glue them together.

Bandsaw the chime body to shape. On the back, drill a ⅛" hanging hole at a 45° upward angle. Position it about 2" from the top, centered from side to side. Drill it about ½" deep. Remove the pattern, and finish-sand the body.

Make the seven tuning pegs next. Start with a ¼×16" dowel, and form two flats on one end as a finger grip. We sanded the flats, using a 2½" sanding drum chucked in a drill press. Be sure to keep the flat sides parallel. Cut off a 1½" length for the first peg. Make six more the same way.

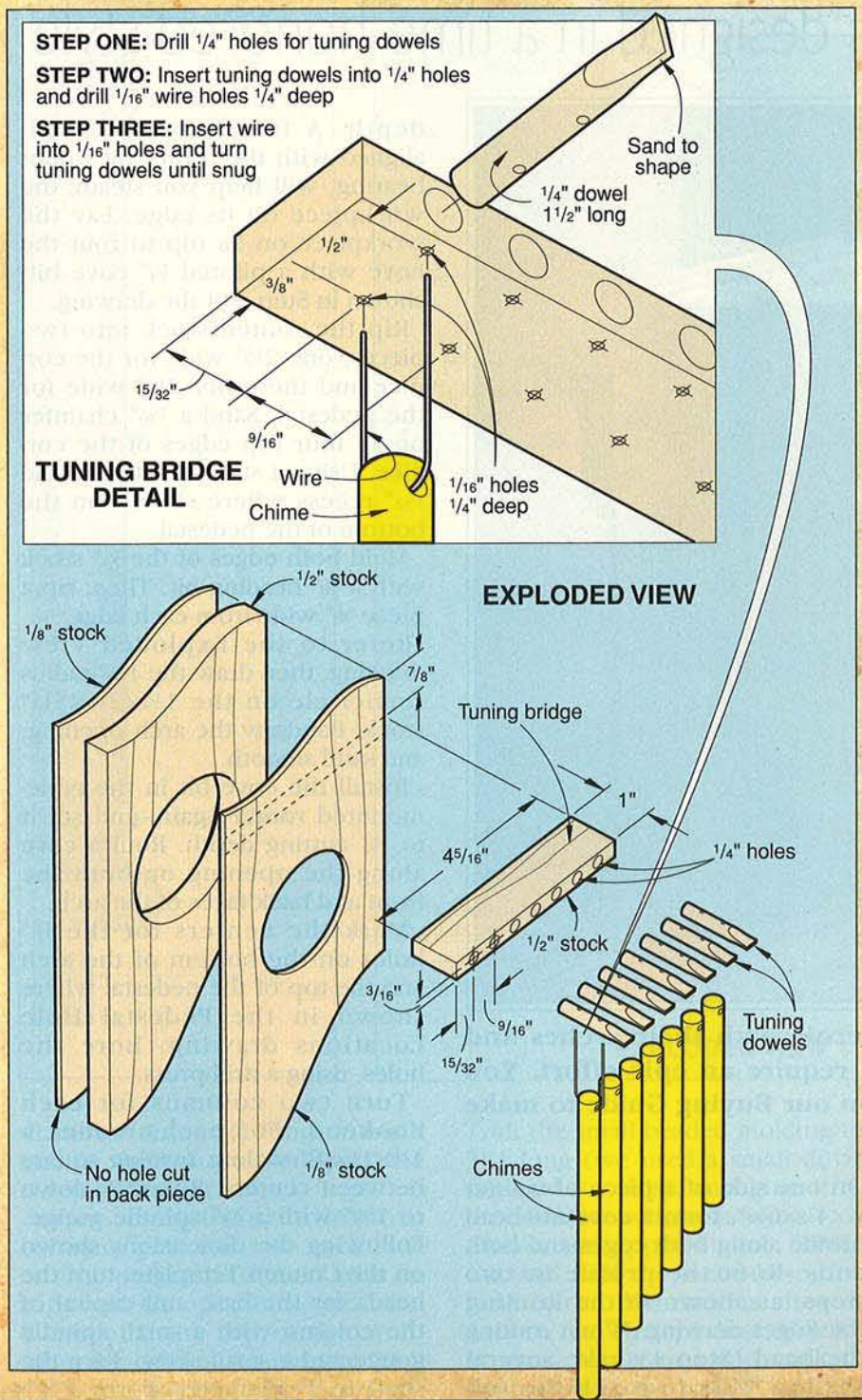
Cut a piece of stock ½×1×4⁵⁄₁₆" for the tuning bridge. On one edge, lay out the seven tuning-peg holes where shown in the Exploded View drawing. Measure the diameter of your tuning pegs, then size the holes so the pegs will fit snugly into them. Drill the holes with a drill press.

Lay out the holes on the bottom of the tuning bridge, where shown in the Tuning Bridge detail. Insert a tuning peg into each edge hole, then drill the 1⁄16" holes. Drill each one ¼" deep with the drill press, going through the bottom of the bridge and into the tuning peg. Remove the tuning pegs, numbering each so you can replace them in the same holes.

Print this article

makes beautiful music

DOOR DECOR



Sand the bridge, and glue it to the chime body where shown. Apply a clear finish. (We used Watco natural Danish oil.) Finish the tuning pegs separately.

Insert the tuning pegs into the bridge, replacing them in the holes they originally came from. Lay out the chime rods in descending order of length. Cut a 2" length of cable (supplied with the rods) for each one.

Hang the longest tube by bending one of the cable pieces into a U shape. Suspend the rod from the middle of the U, then insert the ends of the cable into the 1/16" holes beneath the first tuning peg on the left. With the wire pushed in as far as it will go, give the tuning peg a quarter turn. (It doesn't matter which direction.)

Install the remaining rods the same way. Turn each dowel far enough to align the rod tops. Don't worry that the tuning pegs point in different directions—they usually do end up that way on musical instruments.

Drive a 4d finishing nail into the door or use a commercial hanger to install the chime. To keep it from tilting, position a strip of double-faced foam tape near the bottom on back.

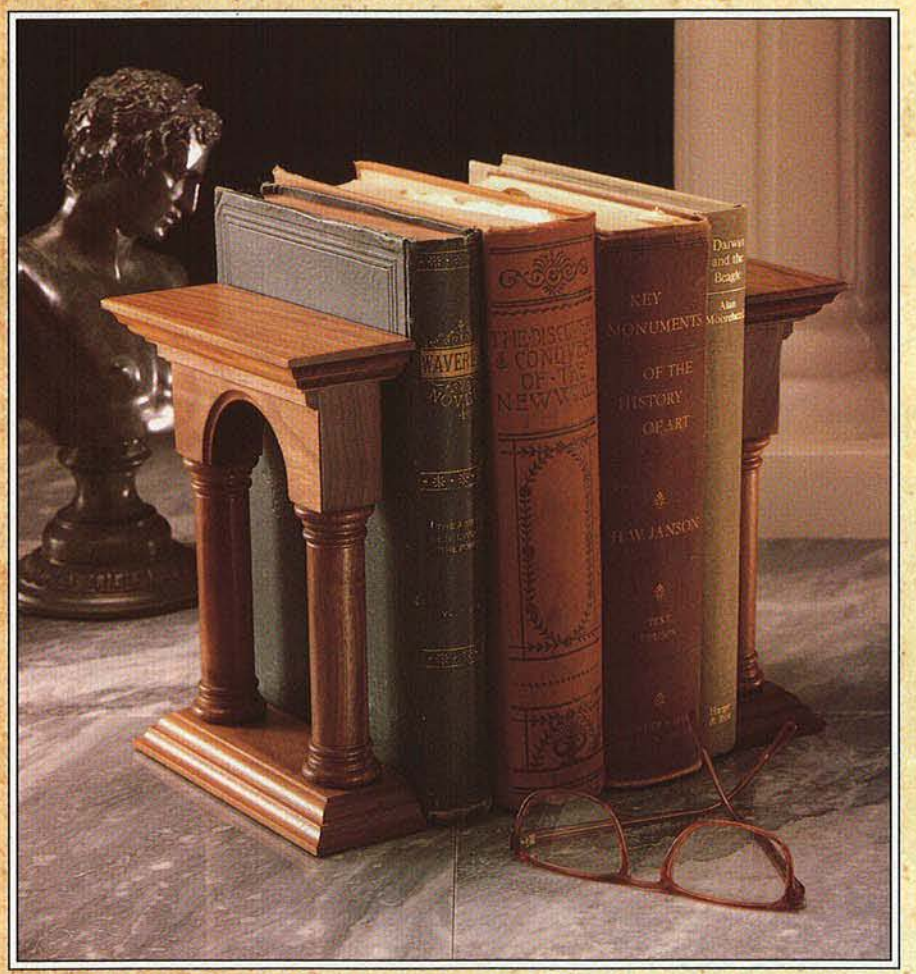
Buying Guide

Tuned chime rods. Set of seven solid aluminum rods, tuned and powder-coated, with attaching cable, $12.50 ppd. in U.S., Jacob's Authentic Musical Windchimes, 10615 Bloomfield Ave., Los Alamitos, CA 90720, or call 310/594-8790 to order.

Project Design: © Jacob Sokoloff, Authentic Musical Windchimes
Illustrations: Jamie Downing
Photograph: John Hetherington

CLASSIC COLUMNS

Bookends designed in a time-honored style



Though these bookends look heroic with their arches and columns, building them doesn't require an epic effort. You can buy the turned columns from our Buying Guide to make construction even easier.

To construct a pair of bookends, you'll need one piece of walnut stock ¼×3×6", two pieces ¾×4⅞×6¾", and two pieces 1¼×2⅛×5¼". Turn the columns from four 1½×1½×8" walnut pieces, or see the Buying Guide for ready-to-use columns..

On one side of a piece of walnut ¾×4⅞×6¾", form a cove-and-bead profile along both edges and both ends. Rout the profile in two steps, as shown in the Routing the Edges drawing. When routing the bead (Step 1), take several shallow cuts to reach the full depth. A fence about 2" tall, aligned with the router bit's pilot bearing, will help you steady the workpiece on its edge. Lay the workpiece on its top to rout the cove with a piloted ¼" cove bit, shown in Step 2 of the drawing.

Rip the routed stock into two pieces, one 2½" wide for the cornice and the other 2¼" wide for the pedestal. Sand a 1/16" chamfer on all four top edges of the cornice. Using a straight bit, rout the 1/32" recess where shown on the bottom of the pedestal.

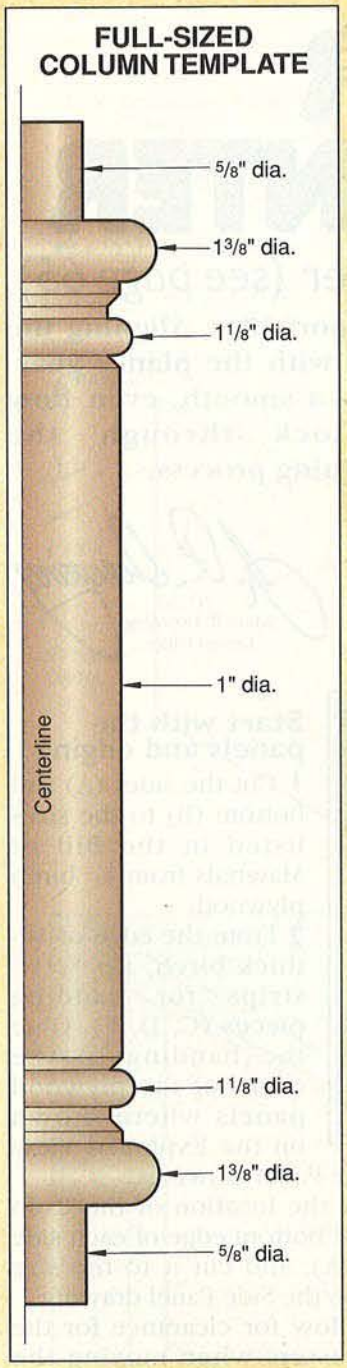
Mold both edges of the ¼" stock with a ⅛" beading bit. Then, rip a piece ⅜" wide from each edge.

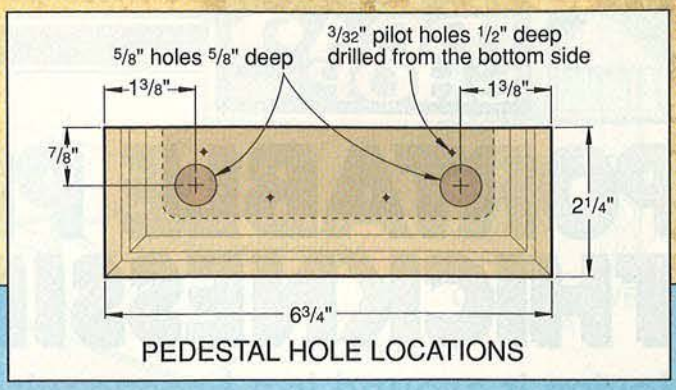
Refer to the Exploded View drawing, then draw the 1⅜"-radius semicircle on the 1¼×2⅛×5¼" stock. Bandsaw the arch opening, and sand smooth.

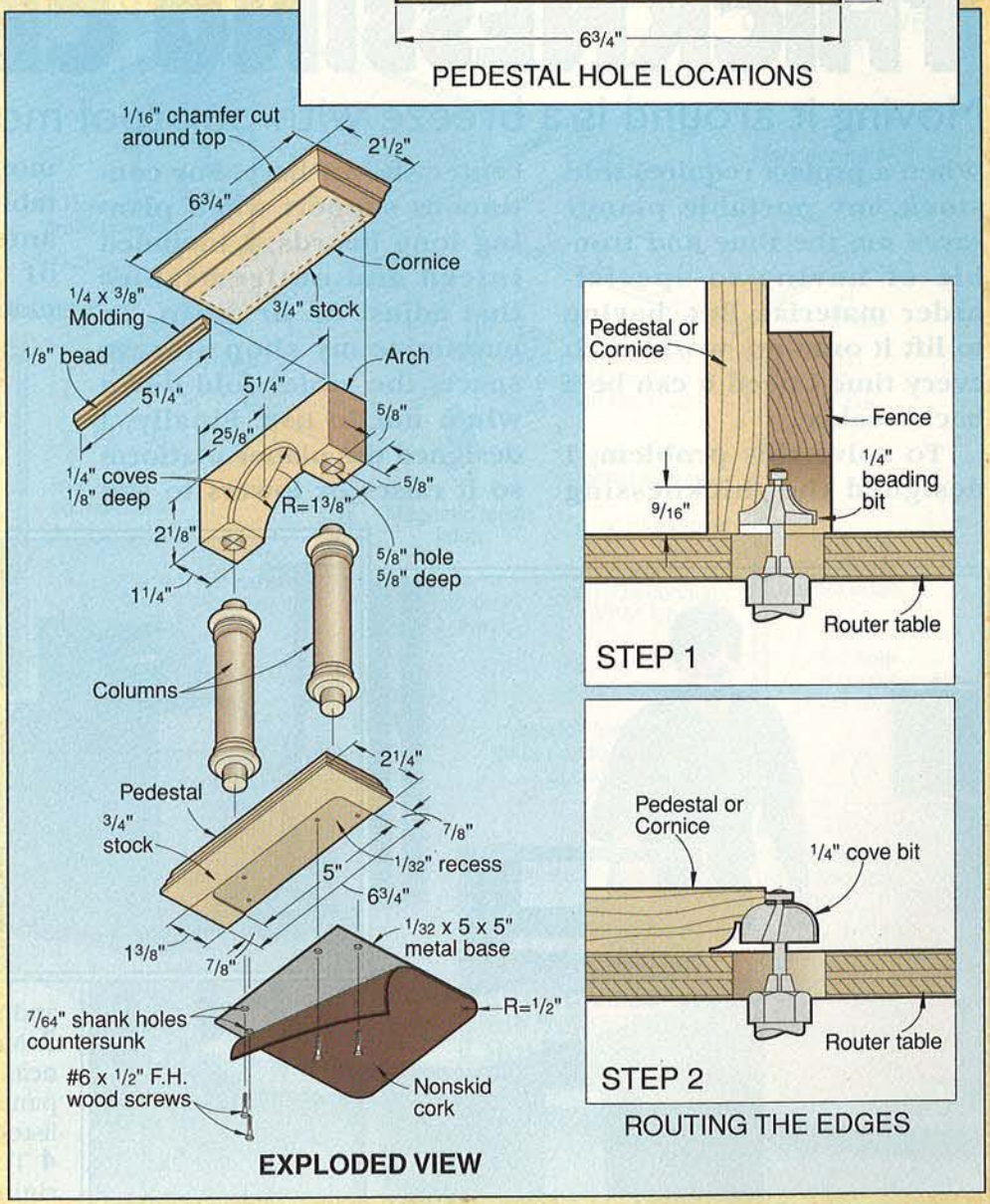
Install the cove bit in the table-mounted router again, and set it to ⅛" cutting depth. Rout a cove along the opening on both the front and back faces of the arch.

Mark the centers for the ⅝" holes on the bottom of the arch and the top of the pedestal where shown in the Pedestal Hole Locations drawing. Bore the holes, using a drill press.

Turn two columns for each bookend. For each, mount a 1½×1½×8" walnut turning square between centers. Round it down to 1⅜" with a ¾" spindle gouge. Following the dimensions shown on the Column Template, turn the beads for the base and capital of the column with a small spindle gouge and a small skew. Turn the shaft to 1" diameter. Form a ⅝"-







ROUTING THE EDGES

diameter tenon ½" long on each end of the column, and part the column from the lathe.

After completing the four columns, glue one into each hole on one pedestal. Glue an arch on top, and clamp. Then, glue the cornice to the top of the arch. Align the back of the cornice flush with the back of the pedestal. Trim the small beaded molding to 5¼" long (we used a small dovetail saw for this), and glue it to the arch face where shown.

Sand, and apply a clear finish. Cut and drill the metal base, following the dimensions shown. Attach to the pedestal with screws. Apply nonskid cork to the bottom of the base.

Buying guide

Columns, bases. Turned 6" columns (walnut, maple, or cherry), $13 for four; two drilled metal bases with self-adhesive cork and screws, item 300100, $5.50. Add $3.65 per order for U.S. shipping. Schlabaugh and Sons, 720 14th St., Kalona, IA 52247, or call 800/346-9663.

Project Design: ©Schlabaugh and Sons Photograph: Wm. Hopkins Illustrations: Kim Downing

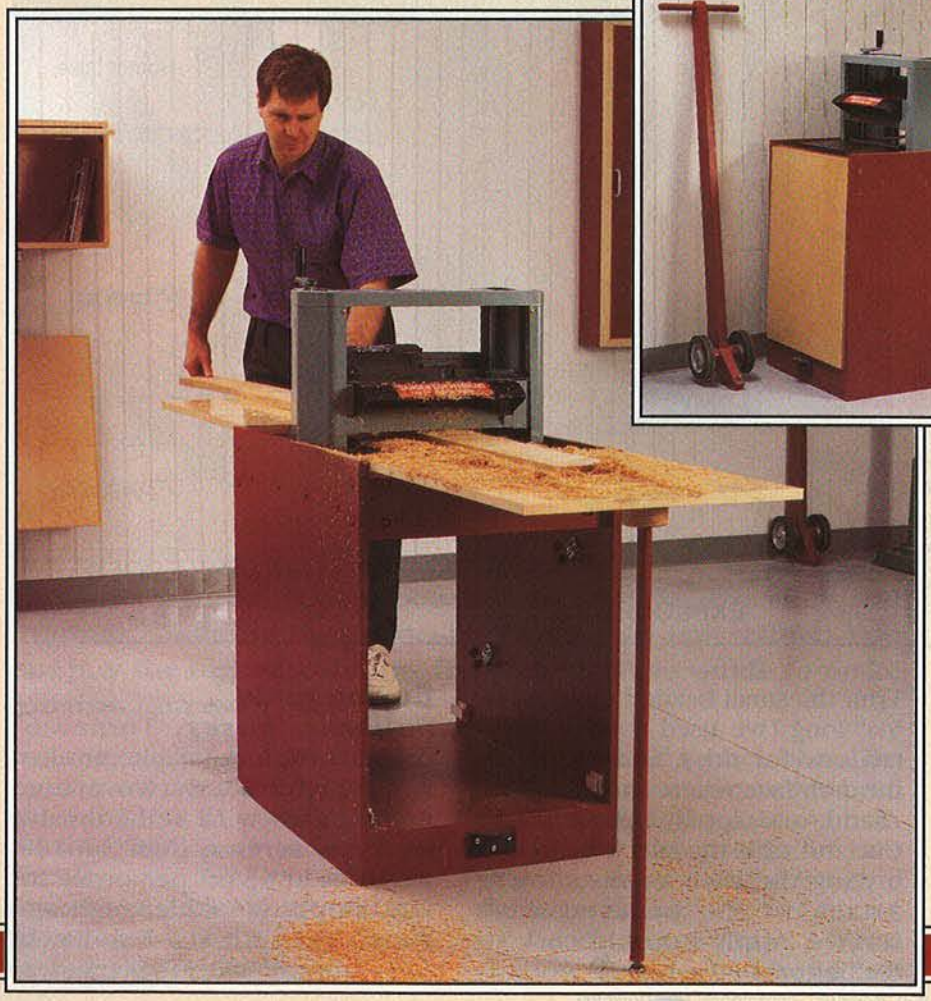
PORTABLE PLANER THICKNESSING CENTER

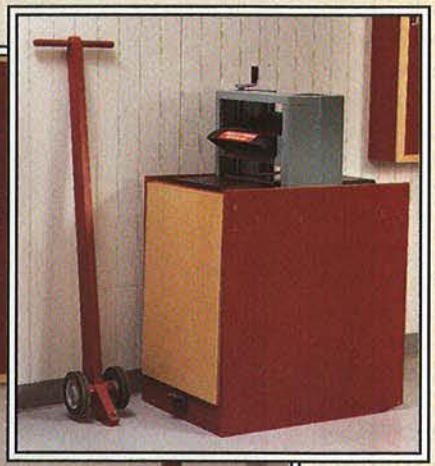
Moving it around is a breeze with our tool mover (see page 65)

When a project requires thin stock, my portable planer saves me the time and trouble of having to special-order material. But, having to lift it onto my workbench every time I need it can be a backbreaker.

To solve this problem, I designed the thicknessing center shown here. For continuous support when planing long boards, I included infeed and outfeed tables that adjust up or down. To maximize my shop storage space, the tables fold down when not in use. Finally, I designed the planer platform so it raises or lowers to suit most portables. Aligning the tables with the planer guarantees a smooth, even flow of stock through the machining process.

James R. Downing
Design Editor





Start with the panels and edging

1 Cut the sides (A) and bottom (B) to the sizes listed in the Bill of Materials from ¾" birch plywood.

2 From the edge of ¾"-thick birch, rip ¼×¾" strips for banding pieces (C, D, E). Glue the banding to the edges of the plywood panels where shown on the Exploded View and Side Panel drawings.

3 Mark the location of the dado near the bottom edge of each side panel (A), and cut it to the size listed on the Side Panel drawing.

4 To allow for clearance for the rigid casters when moving the stand later, mark and cut the tapered bottom corner of each side panel where dimensioned on the Side Panel drawing.

5 Mark the centerpoints on both side panels where dimensioned on the Side Panel drawing and drill the holes to the sizes stated.

Continued

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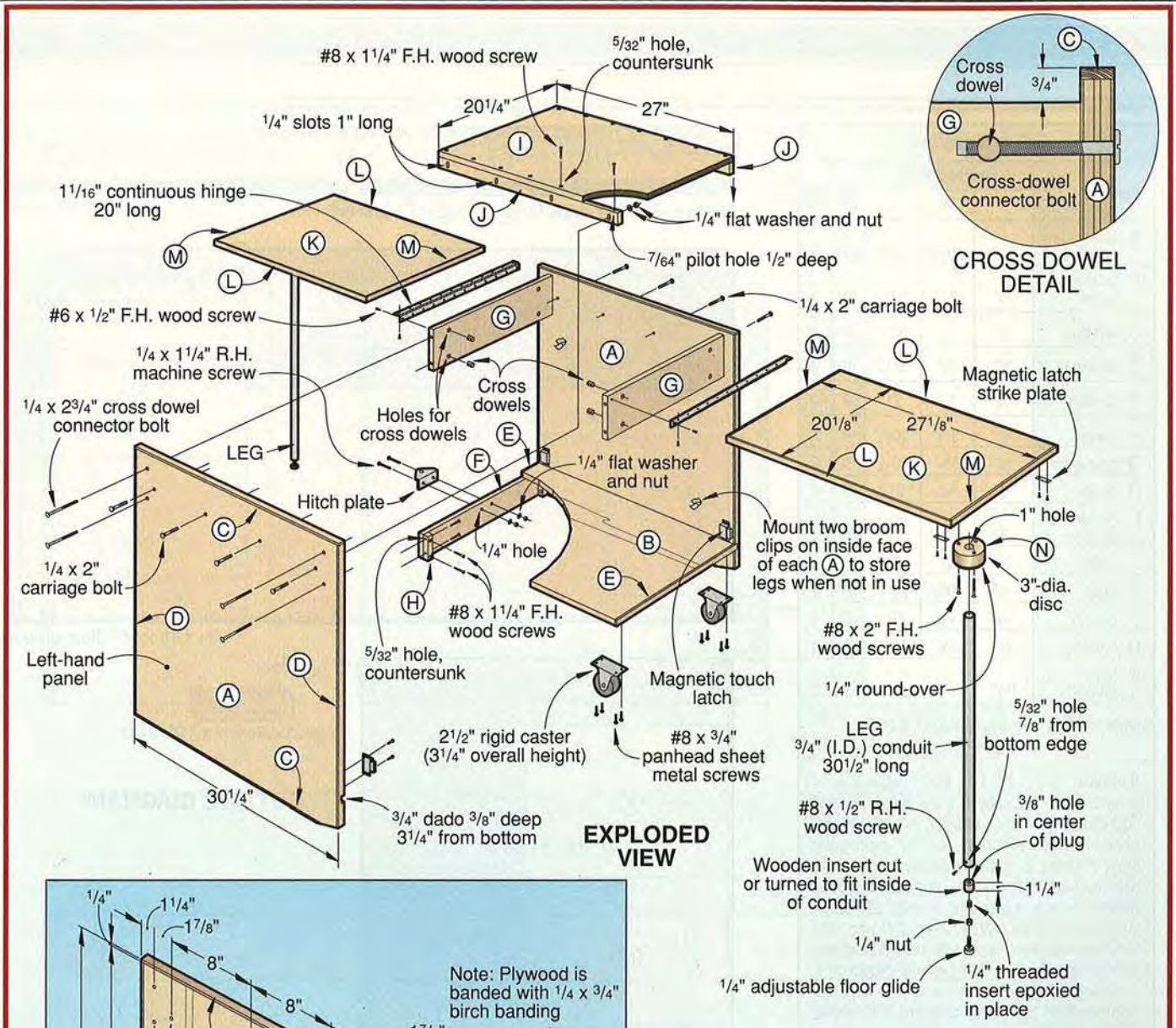

#8 x 1 1/4" F.H. wood screw
5/32" hole, countersunk
20 1/4"
27"
1/4" slots 1" long
1 1/16" continuous hinge 20" long
1/4" flat washer and nut
7/64" pilot hole 1/2" deep
#6 x 1/2" F.H. wood screw
1/4 x 2" carriage bolt
1/4 x 1 1/4" R.H. machine screw
Cross dowels
Holes for cross dowels
1/4 x 2 3/4" cross dowel connector bolt
LEG
Hitch plate
1/4" flat washer and nut
Magnetic latch strike plate
20 1/8"
27 1/8"
1" hole
Mount two broom clips on inside face of each (A) to store legs when not in use
1/4" hole
#8 x 1 1/4" F.H. wood screws
3"-dia. disc
#8 x 2" F.H. wood screws
1/4 x 2" carriage bolt
Left-hand panel
5/32" hole, countersunk
Magnetic touch latch
1/4" round-over
5/32" hole 7/8" from bottom edge
LEG 3/4" (I.D.) conduit 30 1/2" long
2 1/2" rigid caster (3 1/4" overall height)
#8 x 3/4" panhead sheet metal screws
#8 x 1/2" R.H. wood screw
3/8" hole in center of plug
30 1/4"
3/4" dado 3/8" deep 3 1/4" from bottom
Wooden insert cut or turned to fit inside of conduit
1 1/4"
1/4" nut
1/4" adjustable floor glide
1/4" threaded insert epoxied in place
EXPLODED VIEW
Cross dowel
3/4"
Cross-dowel connector bolt
CROSS DOWEL DETAIL
1/4"
1 1/4"
1 7/8"
8"
8"
8"
1 7/8"
1 1/4"
32"
2 1/4"
31 1/2"
1/4" holes
1 7/8"
3"
3 1/4"
1/4"
29 3/4"
30 1/4"
3/4" dado 3/8" deep 3 1/4" from bottom (cut after all banding is glued on)
3 1/4"
3/4"
1/4"
Note: Plywood is banded with 1/4 x 3/4" birch banding
SIDE PANEL
(Inside surface of right-hand panel shown)
LOCATING THE CROSS-DOWEL HOLES
Centerpoint for 1/2" hole
1 5/8"
STEP 1
Use a try square to mark lines along both sides of each hole.
STEP 3
Measure down 1 5/8" and mark an intersecing line across the face of the board.
3/8"
STEP 2
Find center between the lines, and transfer centerlines down the outside face.

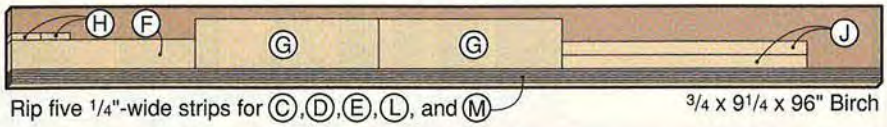
PORTABLE PLANER THICKNESSING CENTER

Bill of Materials

Part	Finished Size* T	W	L	Matl.	Qty.
A sides panel	¾"	29¾"	31½"	BP	2
B bottom panel	¾"	21"	29¾"	BP	1
C banding	¼"	¾"	30¼"	B	4
D banding	¼"	¾"	31½"	B	4
E banding	¼"	¾"	21"	B	2
F toekick	¾"	3¼"	20¼"	B	1
G spreaders	¾"	5¼"	20¼"	B	2
H cleats	¾"	¾"	3¼"	B	2
I planer platform	¾"	20¼"	27"	BP	1
J cleats	¾"	2"	27"	B	2
K tables	¾"	19⅝"	26⅝"	BP	2
L banding	¼"	¾"	27⅛"	B	4
M banding	¼"	¾"	19⅝"	B	4
N leg supports	1½"	3"-dia.		F	2

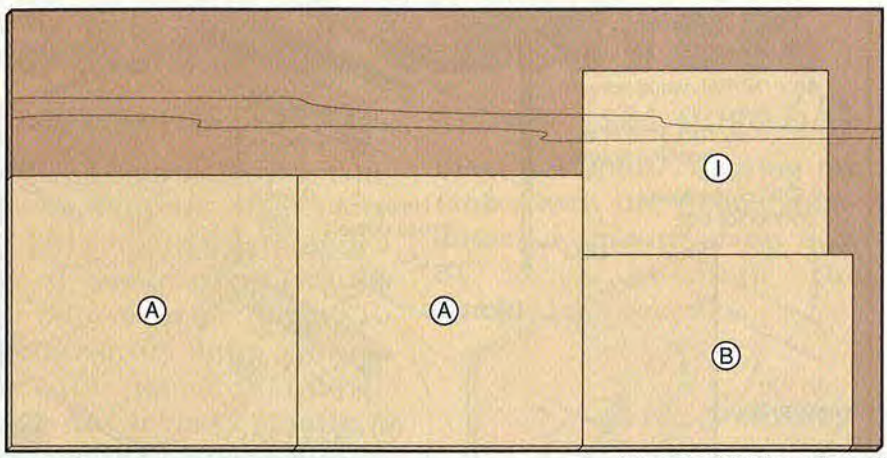
Materials Key: BP- birch plywood, B-birch, C- choice (fir, pine, spruce).

Supplies: #6x½", #8x1¼", #8x2" flathead wood screws; #8x½" roundhead wood screws; 2–2½" rigid casters (3¼" overall height) with #8x¾" panhead sheet metal screws; 2–1⅛" continuous hinge 20" long; 8–¼x2¾" cross-dowel connector bolts and cross dowels; 8–¼x2" carriage bolts with ¼" nuts and washers; 4–magnetic touch latches and strike plates; 2–¾" (I.D.) conduit 30½" long (for legs); 2–¼" adjustable floor glides; 2–¼" threaded inserts; 2–¼" nuts, 4–broom clips; ¼x2" angle iron for hitch plate, 2–¼x1¼" roundhead machine screws (for attaching hitch plate); primer; red enamel paint; clear finish.

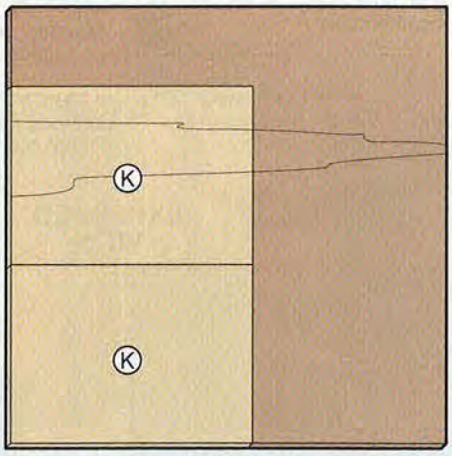


Rip five 1/4"-wide strips for Ⓒ,Ⓓ,Ⓔ,Ⓛ, and Ⓜ

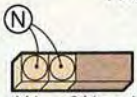
¾ x 9¼ x 96" Birch



¾ x 48 x 96" Birch plywood



¾ x 48 x 48" Birch plywood



1½ x 3½ x 12" (2x4)

CUTTING DIAGRAM

The crossmembers play a supporting role

1 Cut the toekick (F), spreaders (G), and cleats (H) to size from ¾" birch stock.

2 Drill the screw holes through the cleats and screw them to the toekick (F).

Note: *For maximum strength of the completed project, we decided to use cross dowels and connector bolts to connect the side panels to the spreaders. Although they take a bit more work to install than screws, cross dowels provide a stronger joint than screws. (See the detail accompanying the Exploded View drawing for how these work.)*

In shopping for these, we noticed that cross dowels come in slightly different shapes and sizes. Buy yours first (different areas carry different types), and drill the mounting holes in scrap stock first to verify holes sizes and test-fit your particular set.

3 For housing the cross-dowel connector bolts later, drill ¼" holes 2¼" deep into the spreaders (G) where shown on the Parts View drawing at *right*.

4 Following the three-step drawing on the *previous* page, mark the centerpoints for the cross-dowel holes. (When assembling the stand later, the ¼x2¾" connector bolts thread into the cross dowels to hold the assembly firmly together. Then, drill holes through the spreaders where

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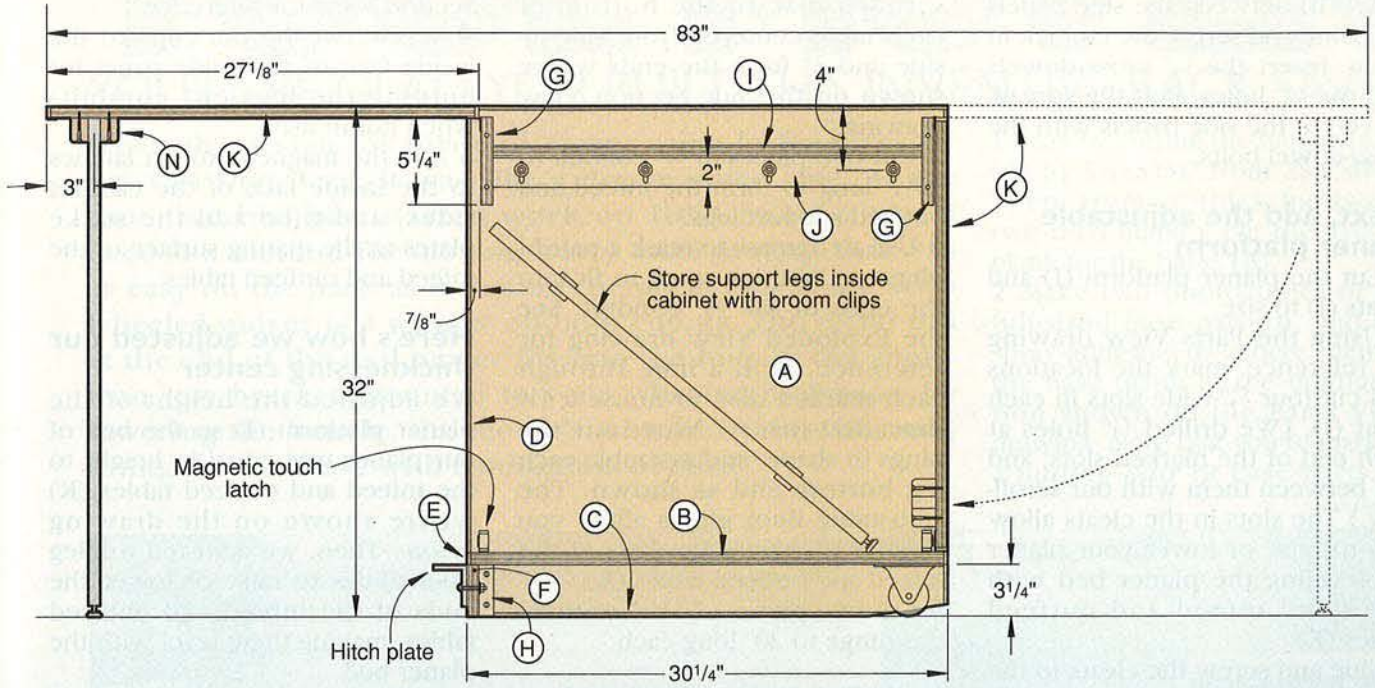
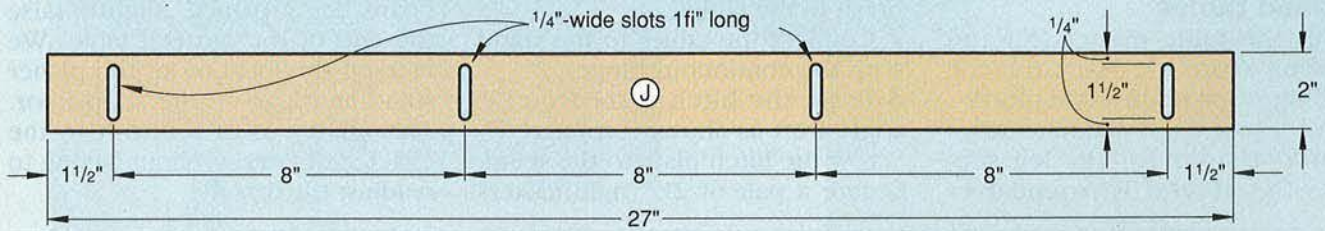
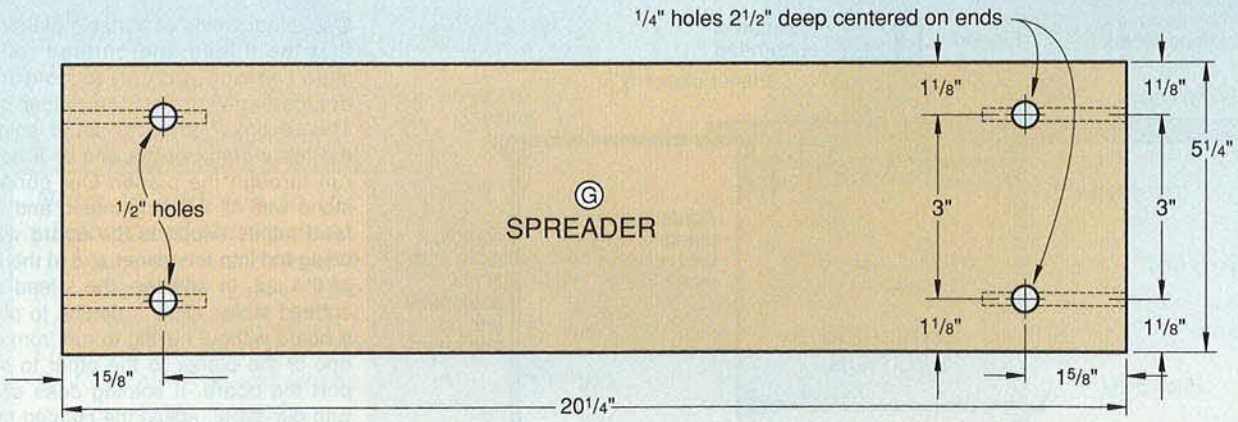
SIDE SECTION VIEW



PARTS VIEW



PLATFORM CLEAT



marked, backing the stock with scrap to prevent chip-out.

5 Glue and clamp the bottom panel (B) between the side panels (A). Glue and screw the toekick in place. Insert the ¼" cross dowels into the ½" holes. Bolt the spreaders (G) to the side panels with the cross-dowel bolts.

Next, add the adjustable planer platform

1 Cut the planer platform (I) and cleats (J) to size.

2 Using the Parts View drawing for reference, mark the locations and cut four ¼"-wide slots in each cleat (J). (We drilled ¼" holes at each end of the marked slots, and cut between them with our scrollsaw.) The slots in the cleats allow you to raise or lower your planer for leveling the planer bed with the stand infeed and outfeed tables (K).

3 Glue and screw the cleats to the bottom surface, flush with the outside edges of the platform (I).

Construct the infeed and outfeed tables

1 Cut the table pieces (K) and banding strips (L, M). Glue the banding strips to the table pieces.

2 Cut a pair of 3"-diameter discs from 2×4 stock for the leg supports (N). Rout a ¼" round-over along one edge and sand smooth. Drill three screw holes through each disc, and then glue and screw a disc to the bottom of each table centered from side-to-side and 3" from the ends where shown on the Side Section View drawing.

3 Cut two pieces of ¾" conduit to 30½" long to form the infeed and outfeed support legs.

4 Use a compass to mark a pair of plugs on ¾"-thick stock to fit into the ends of the ¾" conduit. See the Exploded View drawing for reference. Drill a hole through each marked disc to house a ¼" threaded insert. Now, cut the plugs to shape, and assemble each leg bottom end as shown. The adjustable floor glides allow you to raise or lower the ends of the infeed and outfeed tables (K).

5 Cut two pieces of 1⅛" continuous hinge to 20" long each.

Let's finish the stand and apply the hardware

1 Finish-sand the stand and tables. Paint the stand and apply a clear finish to the tables.

2 Connect the tables to the stand with the continuous hinge.

3 Form the hitch plate from 2" angle iron as shown on *page 67*. Screw the hitch plate to the stand. Secure a pair of 2½" rigid casters to the bottom of the stand where the tapered corners in the side panels are located. See the Side Section View for reference.

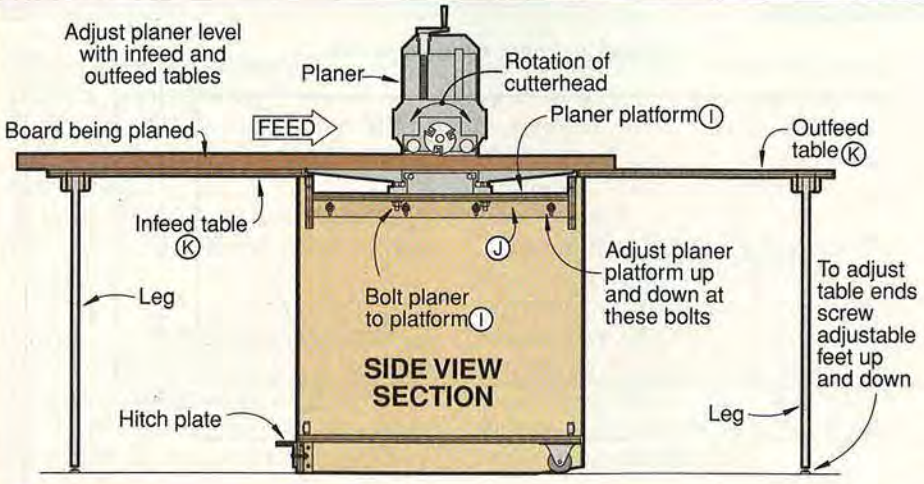
4 Screw two broom clips to the inside face of each side panel for holding the legs (¾" conduit) when not in use.

5 Add the magnetic touch latches to the inside face of the cabinet sides, and then add the strike plates to the mating surface of the infeed and outfeed tables.

Here's how we adjusted our thicknessing center

We adjusted the height of the planer platform (I) so the bed of our planer was equal in height to the infeed and outfeed tables (K) where shown on the drawing *below*. Then, we adjusted the leg floor glides to raise or lower the ends of the infeed and outfeed tables, making them level with the planer bed.

With this done, we ran a few pieces of stock through the planer to verify the settings. If you experience snipe on the end of the board being planed, slightly raise the end of the outfeed table. We marked the location of the planer stand and legs on the shop floor. This allows us to return it to the exact spot later, without having to readjust the legs.



Portable Planers Take a Stand

One shortcoming of portable planers is that the infeed and outfeed rollers aren't strong enough to hold long boards firmly against the planer bed. This results in gouging out or sniping the top surface at the end of a board run through the planer. Our portable stand with its 27"-long infeed and outfeed tables supports the board when being fed into the planer and at the end of the cut. In addition, the infeed and outfeed tables allow a person to plane a board without having to run from one end of the planer to the other to support the board. If sniping does occur with our stand, adjust the outfeed table leg to raise the end of the table.

Written by Marlen Kemmet Project Design: James R. Downing Illustrations: Kim Downing; Roxanne LeMoine Photographs: Bill Hopkins

EASY-DOES-IT TOOL MOVER

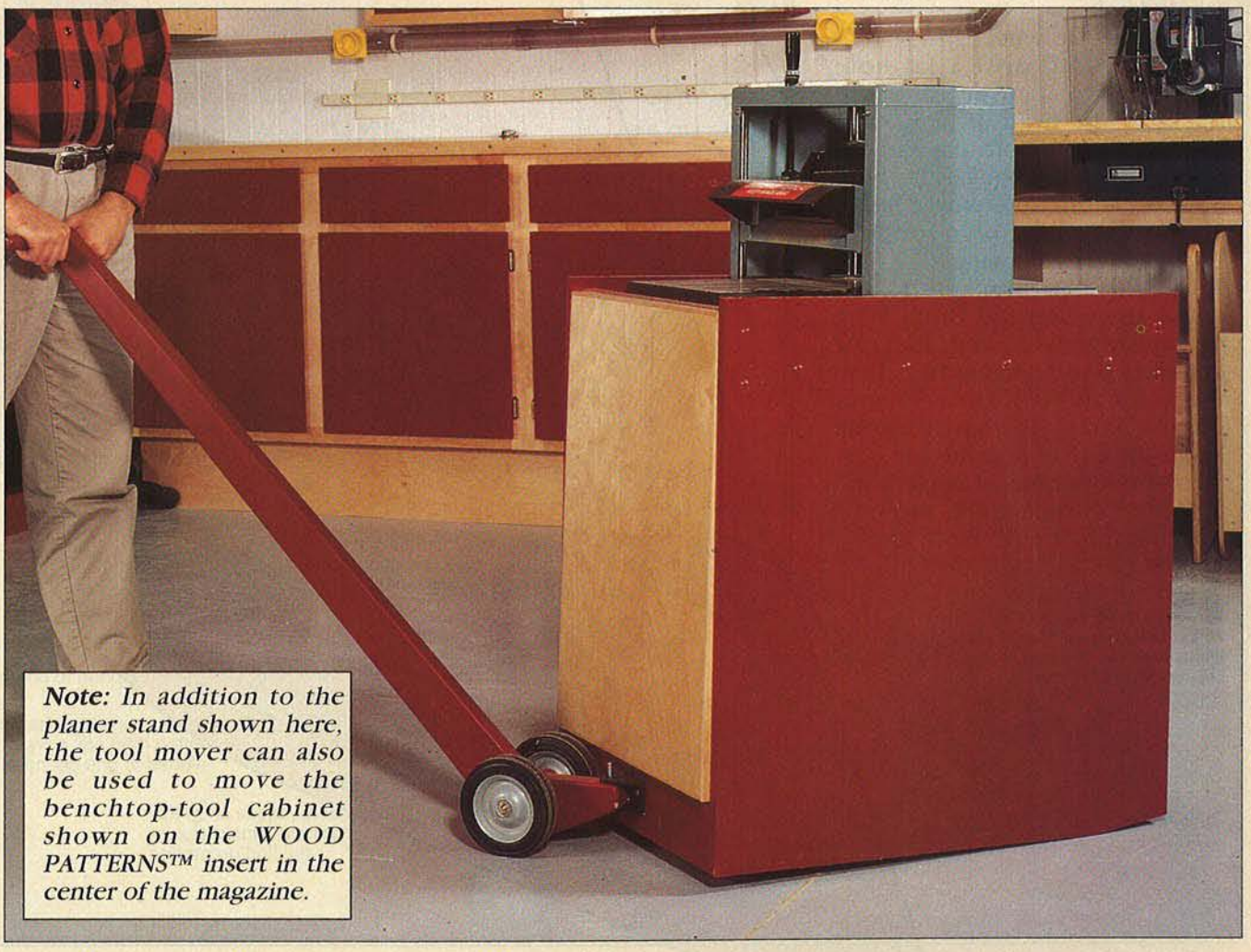
YOU'LL BE GLAD YOU BUILT THIS INVENTIVE BACK SAVER

When the design for this tool mover came in from reader Art Van Den Berg, it was like a dream come true. At the time, we had just started work on IDEA SHOP 2™ and needed a method for moving heavy tools around that was as easy on the back as it was on the pocketbook. Art's two wheeled mover is a winner on both counts. The metal pin at the end of the tool mover fits into the hole in the angle-iron tow bracket mounted to your wheeled tool base. By lowering the handle, the mover's wheels act as a fulcrum, lifting the tool base with a minimum of effort.

1 Start by cutting the handle blank (A) to 3½×51¼" from 2×4 stock. Then, from ¾"-thick hardwood (we used maple), cut the 4¼×24" blank for the bases (B).

2 Make two photocopies of the full-sized base pattern, and use spray adhesive to adhere them to the base blank in the configuration shown on the Parts View drawing. Note that you're marking a *mating pair* of base parts, so

Continued



Note: *In addition to the planer stand shown here, the tool mover can also be used to move the benchtop-tool cabinet shown on the WOOD PATTERNS™ insert in the center of the magazine.*

Print this article

TOOL MOVER

you need to apply one pattern good face down. To do this, trace the pattern to the back side of the photocopy before adhering it to the base blank.

3 Mount a dado blade to your tablesaw or radial-arm saw, and cut the angled ⅜"-deep half-lap joints across the handle and base blanks. Bandsaw the bases to shape, and glue and screw them to the handle blank. Using the dimensions on the Parts View drawing, transfer the handle outline to the handle blank, and cut it to shape.

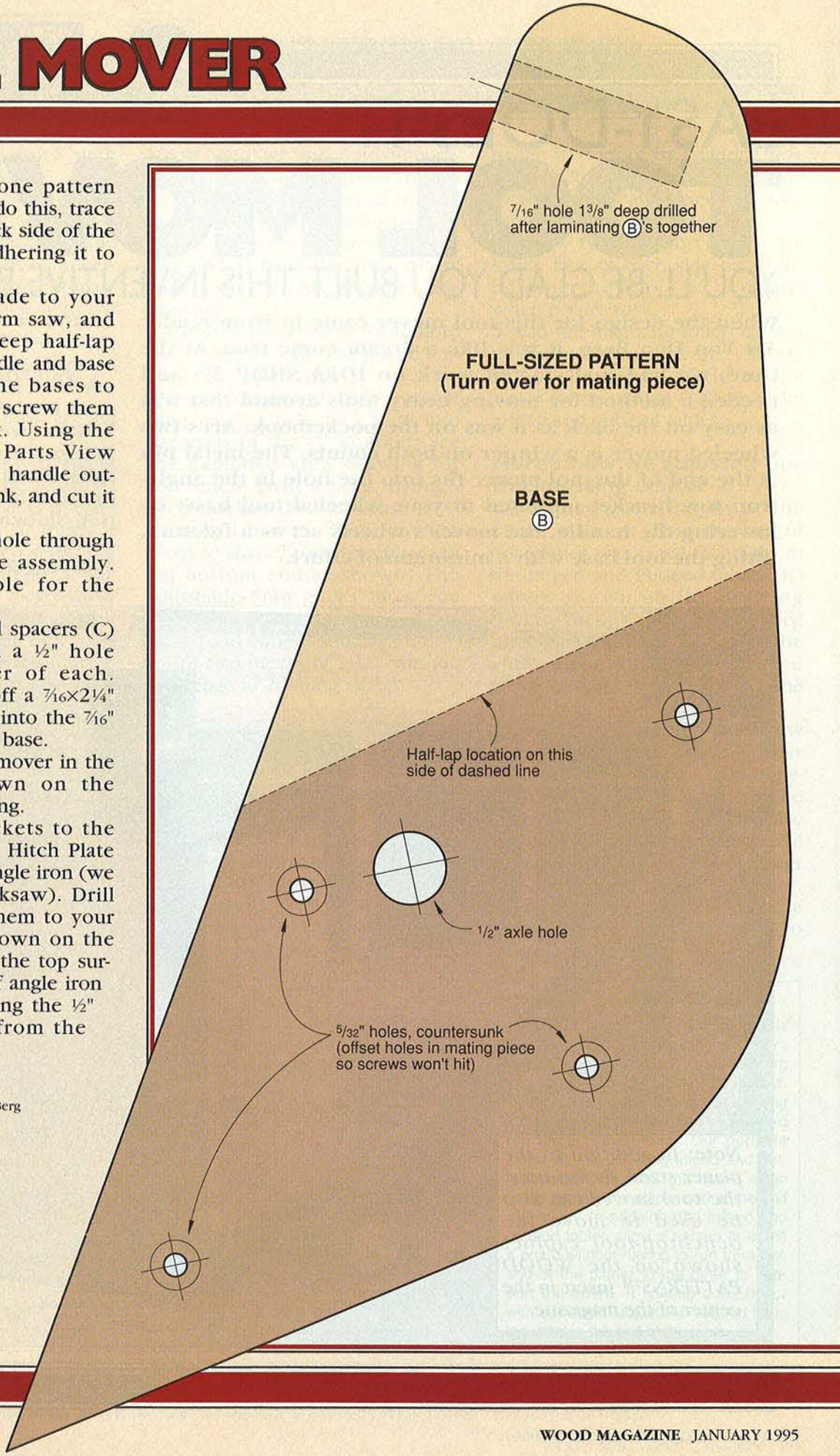
4 Drill the ½" axle hole through the handle and base assembly. Then, drill the hole for the 7/16×2¼" bolt.

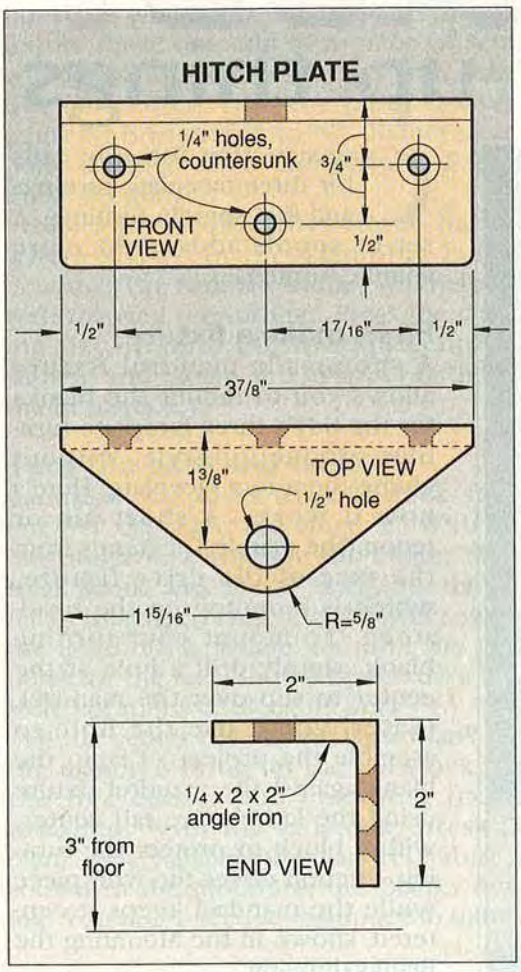
5 Bandsaw the wheel spacers (C) to shape, and drill a ½" hole through the center of each. Hacksaw the head off a 7/16×2¼" bolt. Epoxy the bolt into the 7/16" hole in the end of the base.

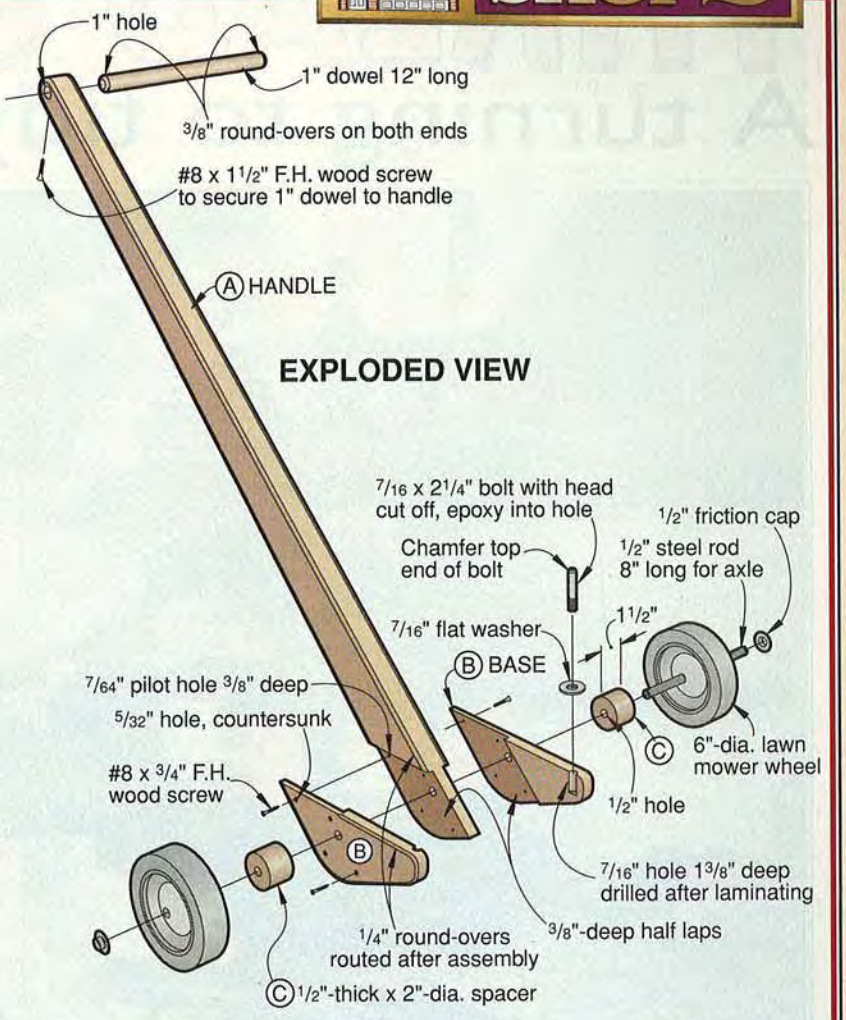
6 Assemble the tool mover in the configuration shown on the Exploded View drawing.

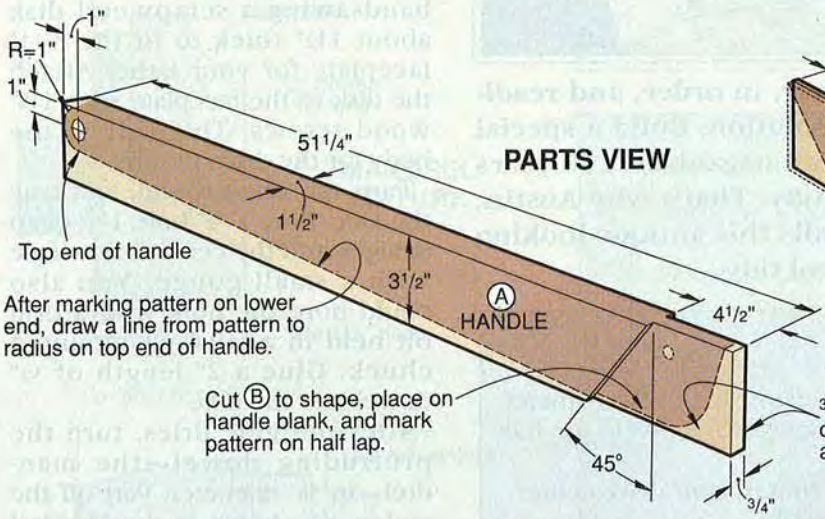
7 Cut the tow brackets to the shape shown on the Hitch Plate drawing from ¼×2" angle iron (we cut ours with a hacksaw). Drill the holes and bolt them to your mobile bases. As shown on the Hitch Plate drawing, the top surface of the portion of angle iron tow bracket containing the ½" hole should be 3" from the floor.

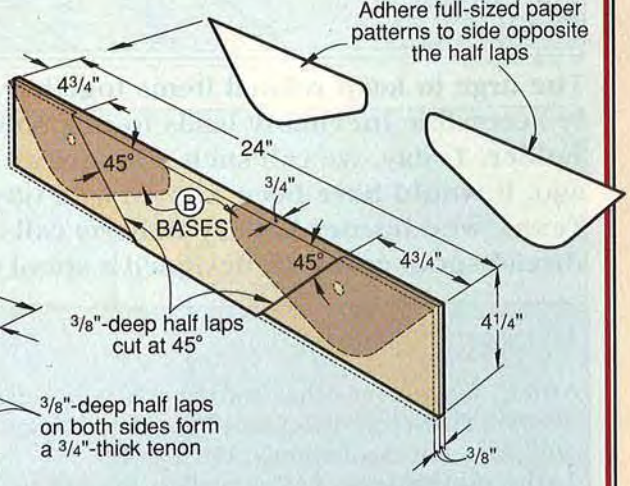
Written by Marlen Kemmet
Project Design: Arthur Van Den Berg
Illustrations: Kim Downing
Photograph: Bill Hopkins


7/16" hole 1 3/8" deep drilled after laminating Ⓑ's together
FULL-SIZED PATTERN
(Turn over for mating piece)
BASE
Ⓑ
Half-lap location on this side of dashed line
1/2" axle hole
5/32" holes, countersunk (offset holes in mating piece so screws won't hit)


HITCH PLATE
1/4" holes, countersunk
3/4"
FRONT VIEW
1/2"
1/2"
1 7/16"
1/2"
3 7/8"
1 3/8"
TOP VIEW
1/2" hole
1 15/16"
R=5/8"
2"
1/4 x 2 x 2" angle iron
2"
3" from floor
END VIEW


1" hole
1" dowel 12" long
3/8" round-overs on both ends
#8 x 1 1/2" F.H. wood screw to secure 1" dowel to handle
A HANDLE
EXPLODED VIEW
7/16 x 2 1/4" bolt with head cut off, epoxy into hole
Chamfer top end of bolt
1/2" friction cap
1/2" steel rod 8" long for axle
1 1/2"
7/16" flat washer
B BASE
7/64" pilot hole 3/8" deep
5/32" hole, countersunk
#8 x 3/4" F.H. wood screw
C
6"-dia. lawn mower wheel
1/2" hole
7/16" hole 1 3/8" deep drilled after laminating
3/8"-deep half laps
1/4" round-overs routed after assembly
C 1/2"-thick x 2"-dia. spacer

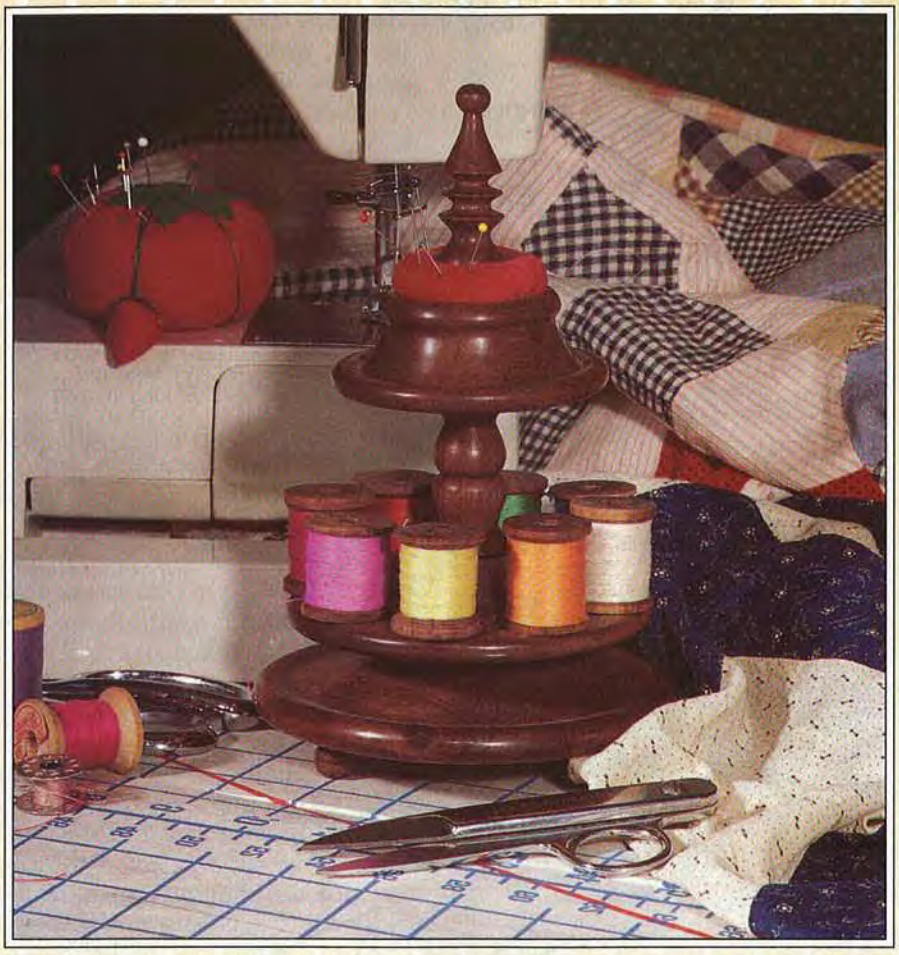

1"
R=1"
1"
51 1/4"
PARTS VIEW
1 1/2"
Top end of handle
After marking pattern on lower end, draw a line from pattern to radius on top end of handle.
3 1/2"
A HANDLE
4 1/2"
Cut B to shape, place on handle blank, and mark pattern on half lap.
45°
3/4"
3/8"-deep half laps on both sides form a 3/4"-thick tenon


Adhere full-sized paper patterns to side opposite the half laps
4 3/4"
24"
45°
3/4"
B BASES
45°
4 3/4"
3/8"-deep half laps cut at 45°
4 1/4"
3/8"

Old-Look

THREAD CADDY

A turning to tidy up things



The urge to keep related items together, in order, and readily accessible inevitably leads to one solution: Build a special holder. Today, we call such a holder an organizer; 150 years ago, it would have been known as a tidy. That's why Austin, Texas, woodturner S. Gary Roberts calls this antique-looking thread-spool caddy he designed a spool tidy.

Project prep

Stock: Walnut (or other hardwood) 1¼×4" diameter, 1"×5" diameter, 1"×5½" diameter, 1¼×1¼×10", and small scraps or dowels for feet and pegs. For eight spools, 1⅛×1⅛×12".
Lathe equipment: 3-4" faceplate, live tail center, spur drive center.
Tools: ½" skew, ½" spindle gouge, parting tool.
Lathe speeds: Discs, 500-800 rpm; spindles, 1,200-1,500 rpm.

Constructing the tidy calls for three faceplate turnings and five spindle turnings. A set of spools adds eight more spindle turnings.

First, make a fixture

A shop-made mandrel fixture allows you to mount the blanks for the tidy's three faceplate turnings production-style, without gluing them to a faceplate. Here's how it works. A short pin or tenon (the mandrel) extends from the face of the drive fixture, which is mounted on the headstock. To mount your turning blank, simply drill a hole at the center to slip over the mandrel. (Later, you'll use the hole to asemble the project.) Clamp the blank against the mandrel fixture using the lathe's live tail center, with a block to protect the turning. Friction drives the workpiece while the mandrel keeps it centered, shown in the Mounting the Blanks drawing.

To build the fixture, start by bandsawing a scrapwood disk about 1½" thick to fit the 3-4" faceplate for your lathe. Attach the disk to the faceplate with 1¼" wood screws. This will be the body for the drive fixture.

Turn the body round, and true the face. Bore a ½" hole 1¼" deep straight into the center of the face with a small gouge. You also could bore the hole with a drill bit held in a tailstock-mounted chuck. Glue a 2" length of ½" dowel into the hole.

After the glue dries, turn the protruding dowel—the mandrel—to ⅜" diameter. Part off the end at ⅜", shown in the Mandrel Fixture drawing, *opposite page.* Turn the body to the profile

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shown, leaving a flat face about 1½" in diameter around the mandrel.

To make the clamping fixture, which will hold the workpiece against the mandrel fixture, bore one end of a piece of scrapwood with a hole that fits over your lathe's live tail center. Turn the piece between centers, bringing it to ¾" diameter at a point about 2" from the tailstock. Part off the 2" section.

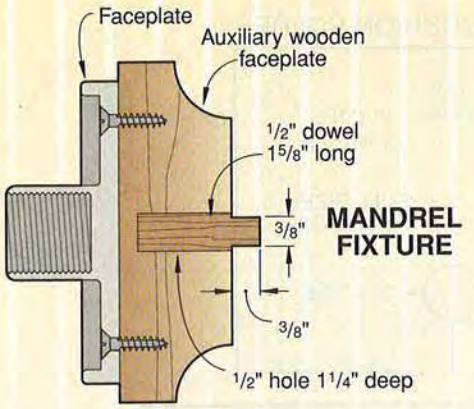
Glue a piece of leather to the flat end where shown in the Clamping Fixture drawing. The resilient leather will help prevent marring the turning. Press the clamping fixture onto the live tail center, as shown, and mount the mandrel fixture on the headstock.

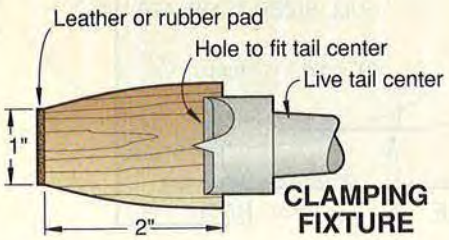
Turn the base and table

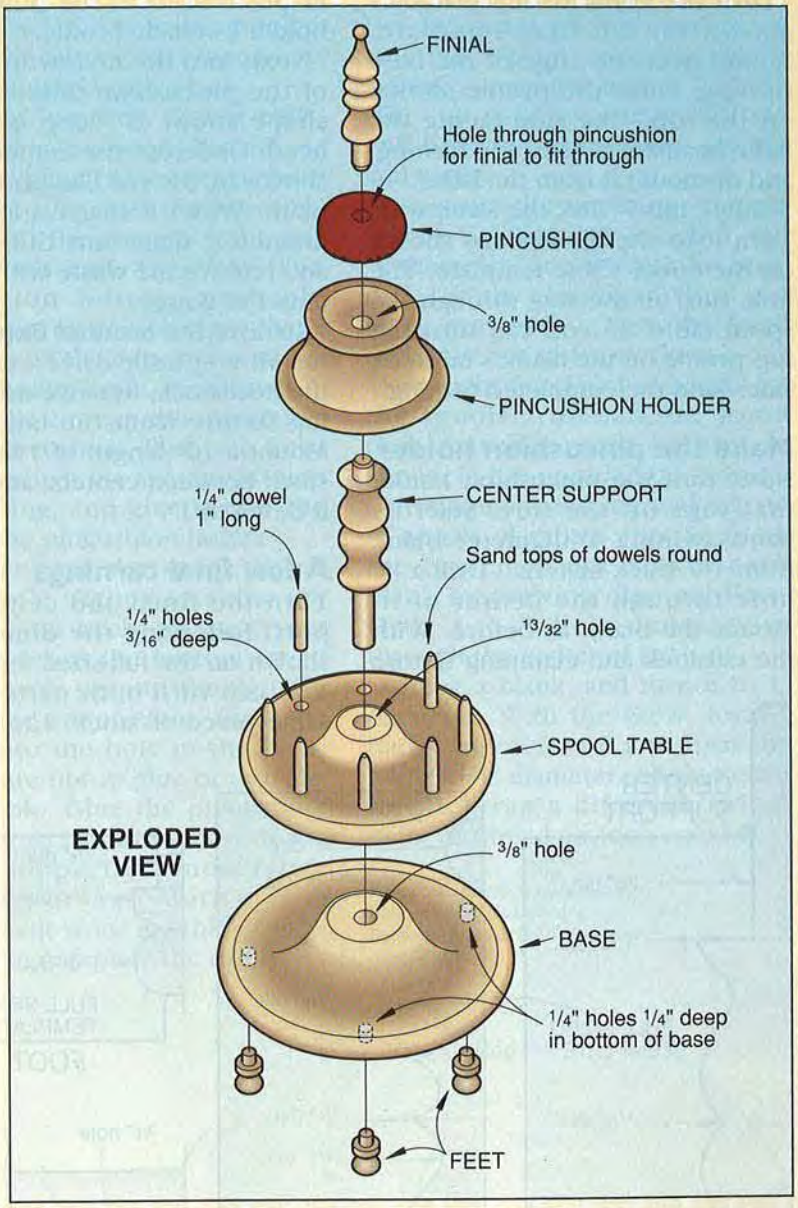
Bandsaw two disks from 1"-thick stock, one 5½" diameter; the other, 5". With a ⅜" bit, drill a hole through the center of the small blank, and one ⅜" deep into the center of the large blank. On the other side of the large blank, locate and drill the three holes for the feet, shown by the Base Foot-Hole Locations drawing on *page 71*.

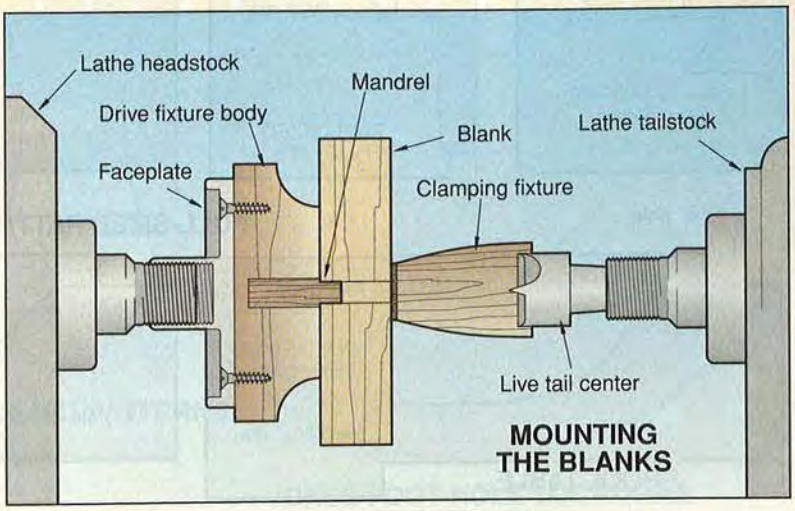
Fit the center hole in the large blank over the mandrel. Bring up the tail stock with the live center and clamping fixture installed. With the tailstock, press the blank snugly against the mandrel fixture, as shown in the Mounting the Blanks drawing. You don't need to clamp it too tightly.

Continued









THREAD CADDY

Turn the blank to the diameter shown on the Base template. Round over the edge of the base turning. Form the profile shown on the top—the side facing the lathe headstock. Sand the turning, and dismount it from the lathe.

Chuck the 5" disk the same way. Turn it to the dimensions shown on the Spool Table template. The hole runs all the way through the spool table, so you can turn the top profile on the blank's tailstock side. Sand the completed turning.

Make the pincushion holder

Now, turn the pincushion holder that tops off the tidy. Start by bandsawing a 4"-diameter blank from 1¼"-thick material. Drill a ⅜" hole through the center of it. Mount the blank as before. With the tailstock and clamping fixture in position, turn the pincushion holder's outside profile.

Next, turn the hollow in the top of the pincushion holder. A cup shape about ⅜" deep is all you need. Undercut the center where shown by the *red* line on the template. When it reaches about ½" diameter, dismount the turning and remove the waste with a hand chisel or gouge.

Remove the mandrel fixture, and install a spindle-drive center on the headstock. Remove the clamping fixture from the tail center. Mount a 10" length of 1¼" square stock between centers, and round it down to 1".

A few final turnings

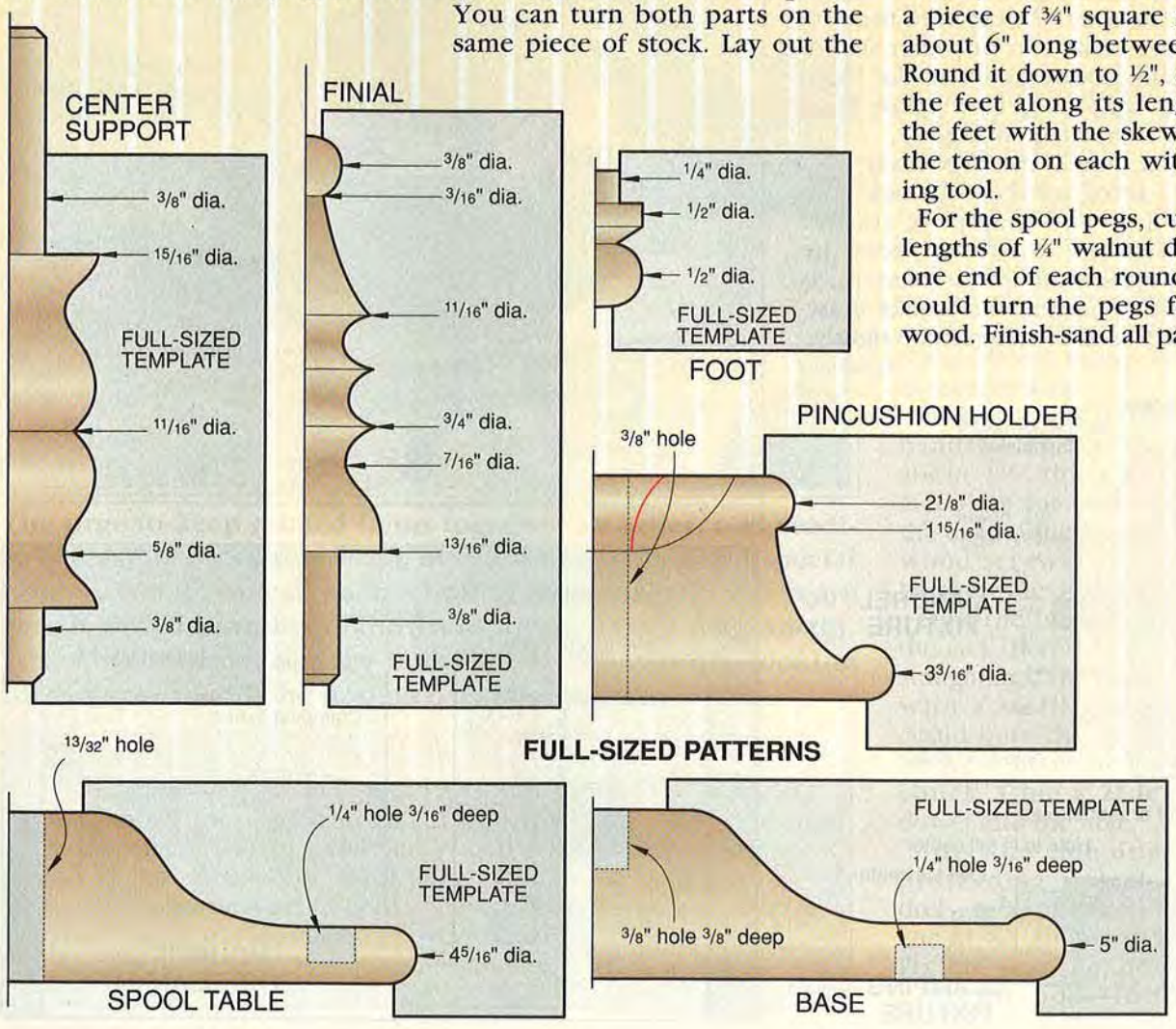
Turn the finial and center support, following the dimensions shown on the full-sized templates. You can turn both parts on the same piece of stock. Lay out the finial near the tailstock end. At the bottom of the finial's tenon, allow 3/16" for a parting-tool cut. Then, lay out the center support, starting from the tip of the top tenon (the shorter one).

Turn both parts to shape with the skew and gouge, leaving a supporting tenon about ⅛" diameter at the top of the finial ball. Part in between the finial's tenon and the center support's top tenon, leaving about ⅛" of stock. Part in at the bottom of the center support's bottom tenon, again leaving about ⅛".

Remove the turning from the lathe, and saw the pieces apart with a fine-tooth backsaw. Cut the waste from the top of the finial and the bottom of the center support, and sand the parts.

Now, turn the three feet. Mount a piece of ¾" square scrapwood about 6" long between centers. Round it down to ½", and lay out the feet along its length. Shape the feet with the skew, and form the tenon on each with the parting tool.

For the spool pegs, cut eight 1⅛" lengths of ¼" walnut dowel. Sand one end of each round. You also could turn the pegs from scrapwood. Finish-sand all parts.



Put it all together

Drill the holes for the spool pegs where shown on the Spool Table top-view drawing. Glue the spool pegs into the holes. Glue the feet into their holes on the base.

Apply a clear finish to all parts, leaving unfinished the tenons on the center support and finial. Allow the parts to dry while you stuff the pincushion.

To do that, start with a piece of velvet or velour about 3" in diameter. (Fabric stores often have a remnant table where you can find small bits of suitable material.) Thread a needle with about 18" of thread—the color doesn't matter; it won't show.

Then, take a series of stitches around the fabric circle, about ¼" from the edge, shown in the Gathering the Pincushion drawing. Make small stitches and space them evenly for a neat job. When you get back to the starting point, pull the ends of the thread to gather the fabric into a bag.

Stuff the bag with cotton balls, quilt batting, polyester fiberfill, or the like. Plump up the pincushion enough to fit into the turning. Then, pull the threads tight and tie the two ends together. The pincushion bottom probably won't close up completely—that's fine. Snip off the excess thread.

With a utility knife, cut a small X-shaped slit through the top center of the pincushion. Push the finial tenon through the slit, on through the stuffing, and glue it into the hole in the pincushion holder.

Now, enlarge the spool table's center hole slightly to allow the table to spin freely on the center support. Insert the bottom tenon of the center support through the top of the spool table. Glue the tenon into the hole in the base, taking care not to glue or trap the spool table. Glue the pincushion assembly to the top tenon of the center support (cyanoacrylate adhesive or automotive trim cement will work for this). Install the feet to complete the caddy.

Spin a set of spools

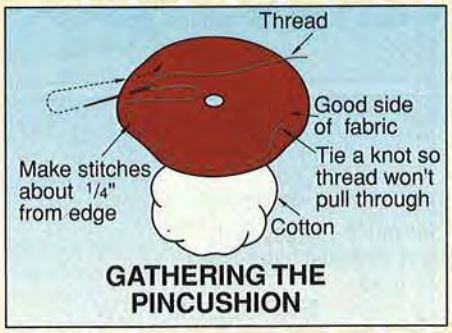
Here's a great finishing touch for your tidy: a set of matching thread spools. A mandrel fixture like the one you used for the spool tidy will help you turn them quickly and easily.

Construct the new drive fixture with a 5/16"-diameter mandrel and ¾"-diameter face around the mandrel. Use the clamping fixture you made previously. (Turn the small end to ¾" for easier working.)

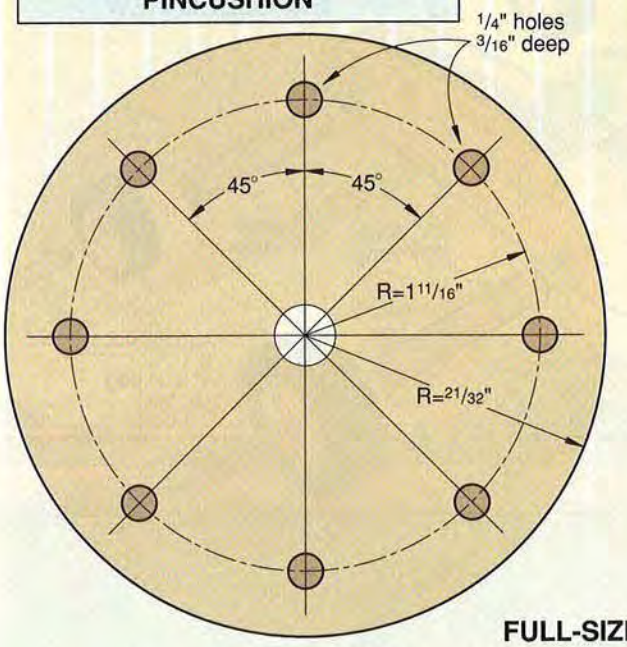
Saw eight 1⅛×1⅛×1¼" blanks for the spools. You can use wood that matches your caddy, as shown in the photograph, select a contrasting wood, or make a set of spools of mixed species. Mark the center on one end of each blank by drawing diagonal lines. Drill a 5/16" hole lengthwise through the center of each.

Chuck a blank, and turn it to 1" diameter. With the skew, form a flange at each end and turn the body to ⅞" diameter. Apply a clear finish. Wrap a different, bright color of thread on each spool.

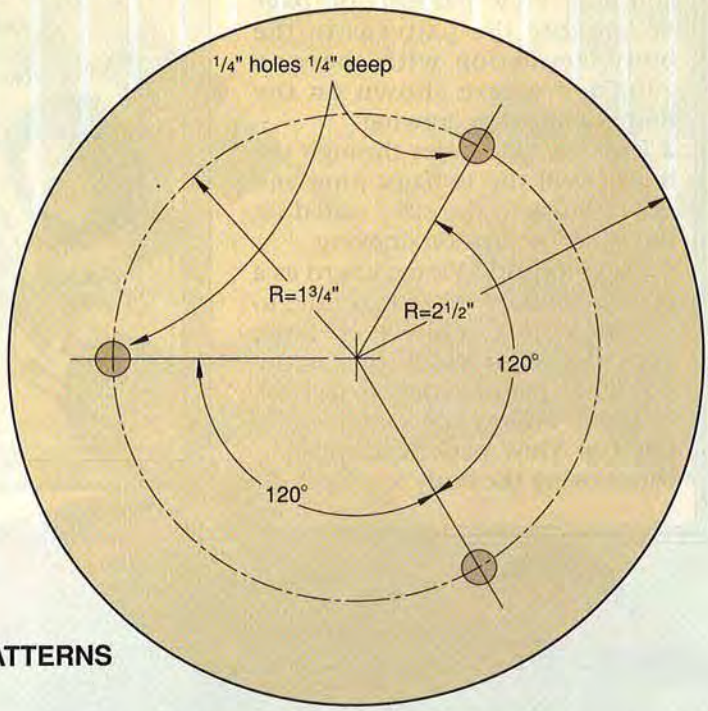
Project Design: © S. Gary Roberts
Illustrations: Kim Downing
Photograph: John Hetherington



GATHERING THE PINCUSHION



SPOOL TABLE
(TOP VIEW)

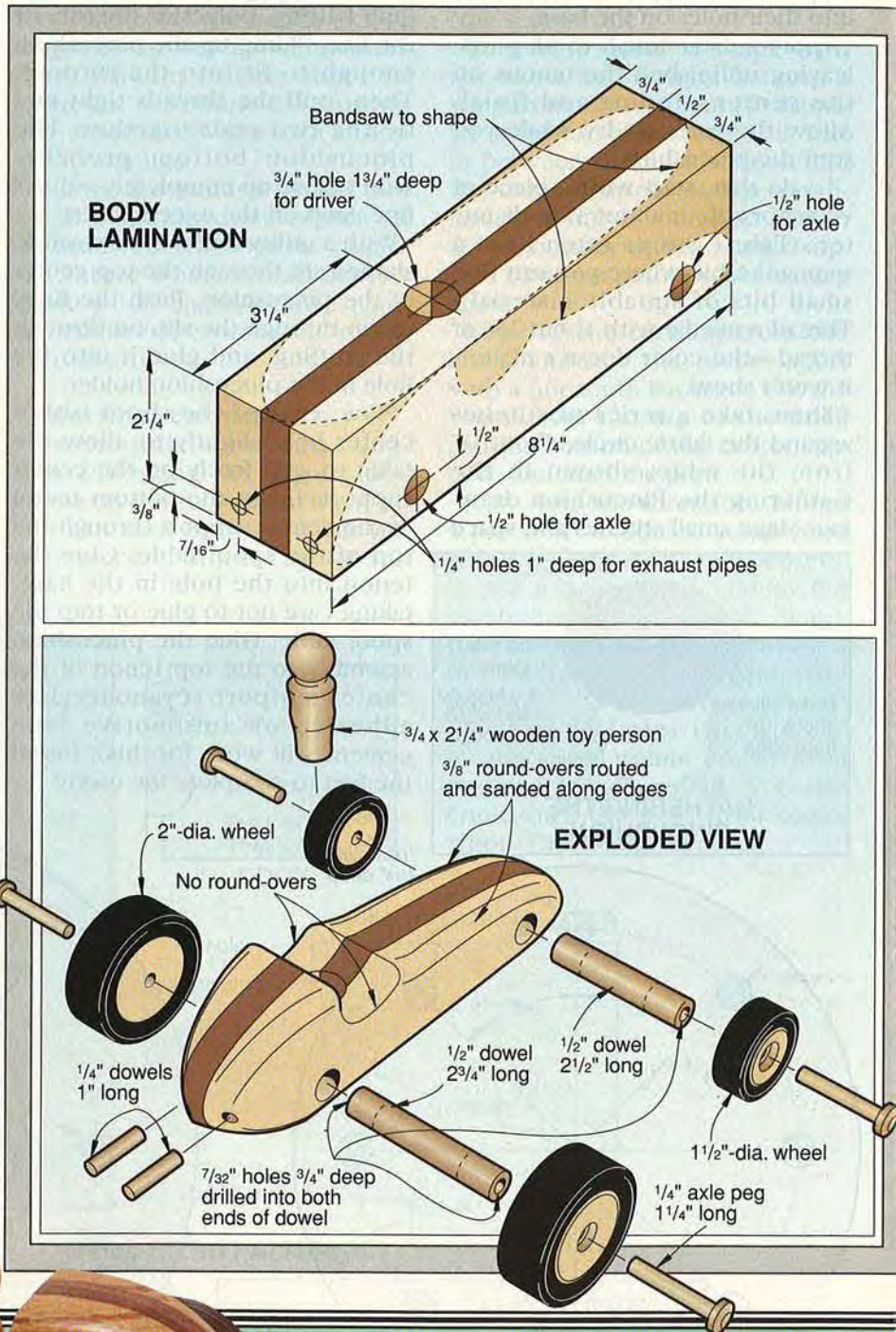


BASE FOOT-HOLE LOCATIONS
(TOP VIEW)

FULL-SIZED PATTERNS

RIP-ROARIN' RACE

Gentlemen (and ladies), start your bandsaws. This oval-track racer may be just the toy to put a smile on a young driver's face. The rubber tires make these beauties corner like the real thing.



Start with the aerodynamic body

1 From ¾" stock cut two pieces to 2⅜×9". From ½" walnut, cut one piece to the same size. With the edges and ends flush, glue the ½" stock between the ¾" stock. (As shown in the photo *below right*, we used a variety of woods for our racers. Although several combinations looked attractive, we highly recommend selecting straight-grained stock.)

2 Joint or sand the bottom edge of the lamination flat for a 2¼" thickness (top to bottom). Crosscut the front and back ends square for an 8¼" finished length. Then, make a photocopy of the full-sized Top and Side View patterns on *page 86*. Adhere the patterns to the body lamination with spray-on adhesive where shown on the Body Lamination drawing.

3 Drill the axle holes through the body. Drill the exhaust-pipe and driver holes to the sizes stated on the Body Lamination drawing.

4 Using the Side View pattern as a guide, bandsaw the side profile to shape. With double-faced tape, stick the waste stock (it has the Top View pattern stuck to it) back in place. Follow the cutlines on the Top View pattern to finish bandsawing the body to shape.

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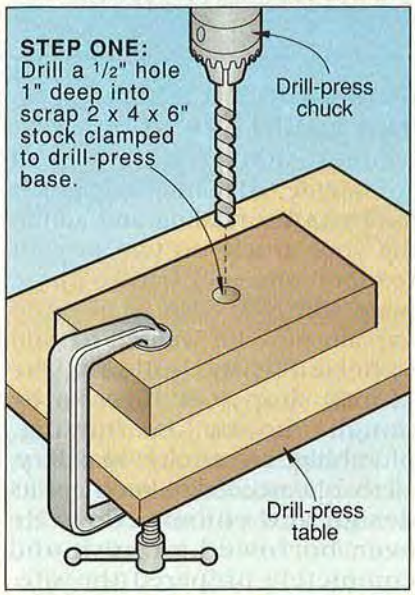
CARS FULL-SIZED PATTERNS GIVE YOU THE INSIDE TRACK


DRILLING THE AXLE HOLES
STEP ONE:
Drill a 1/2" hole 1" deep into scrap 2 x 4 x 6" stock clamped to drill-press base.
Drill-press chuck
Drill-press table

5 Fit your table-mounted router with a ⅜" round-over bit, and rout along the edges except the area where the driver sits as noted on the Exploded View drawing. Be careful not to let the router-bit pilot fall into the axle holes when routing the edges. To complete the aerodynamic look, sand round-overs along the edges not accessible with the router. Finish-sand the car body; it's easier to do it now than after you glue the axles and exhaust pipes in place.

Add the axles, wheels, and exhaust pipes

1 From ½" dowel stock, cut the front and rear axles to length.

2 Using the three-step drawing *at left* for reference, drill a 7/32" hole ¾" deep centered into the ends of each axle.

3 Center and glue the axles in the body. The longer axle is for the rear wheels. Immediately wipe off excess glue with a damp cloth.

4 Cut the exhaust pipes to length from ¼" dowel stock, and glue them in place.

5 Remove the tires from the wooden hubs. Finish-sand each car body, and apply a clear finish to the bodies and wooden hubs.

6 Press the tires back onto the hubs. Slide the axle pegs through the wheels, and glue the pegs into the holes in the axles. You're ready to roll.

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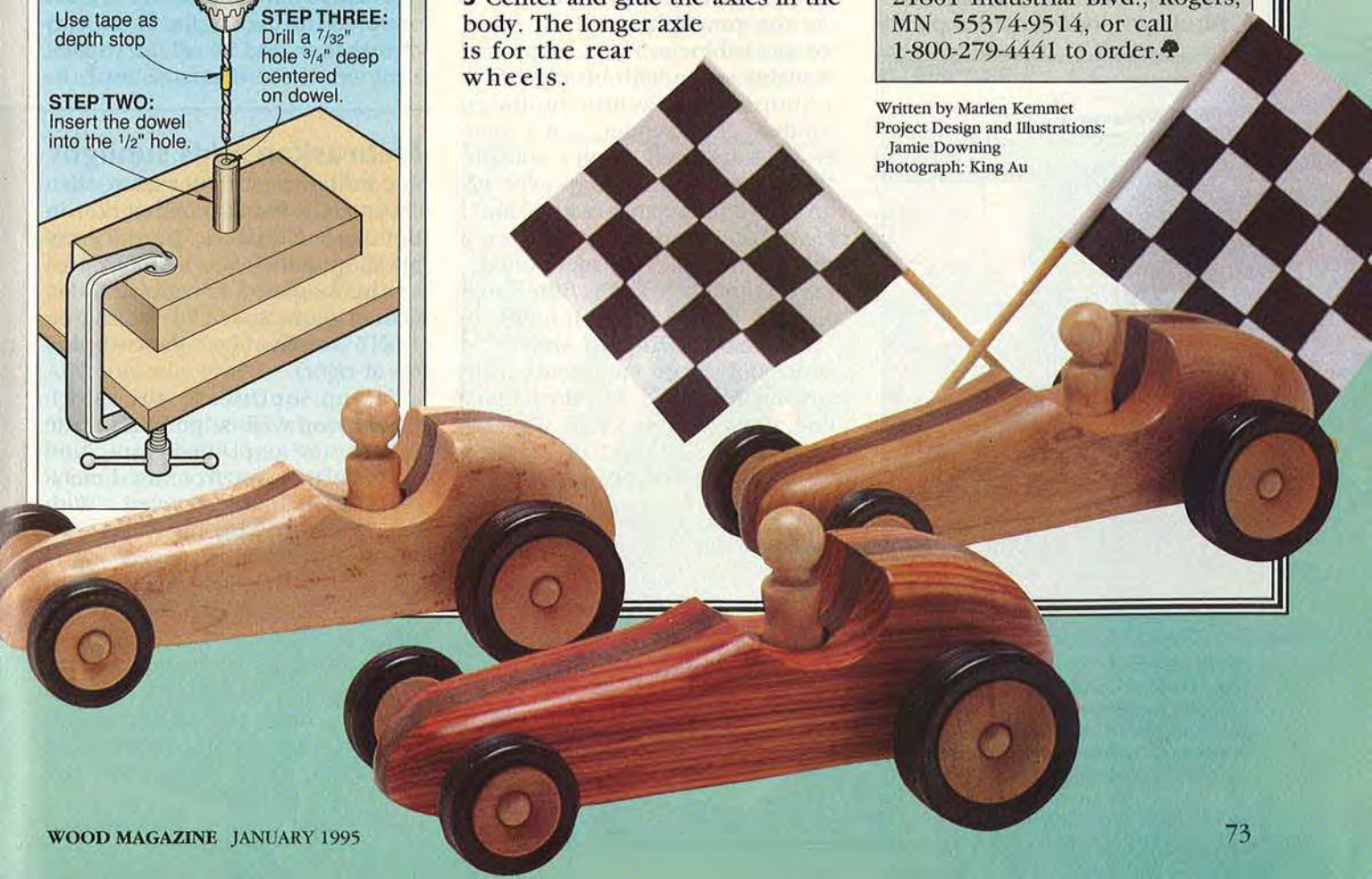
Written by Marlen Kemmet
Project Design and Illustrations: Jamie Downing
Photograph: King Au



MORE HOME WORKSHOPS THAT WORK

WOOD® magazine readers show their stuff—again!

In the April 1993 issue of *WOOD* magazine, we introduced you to two home woodworkers and took you on a photographic tour of their shops. That article generated a ton of responses from other justly proud readers, and we thank all who wrote. Here and on the following pages, join us as we take another tour of some unique home workshops.

A New York shop built just for Shopsmith tools

Harold Cator wrote to us describing his 12×12' storage-building shop behind his home in Rochester, New York. He tailored the shop, *below*, to accommodate his 510 Shopsmith and other Shopsmith equipment. "By the time I paid for installing an overhead garage door," Harold penned, "I could have had a one-car garage for only $300 more!"

The large door provides plenty of work light, though, plus easy handling of materials and projects. And in warm weather, the yard outside the door becomes a shop extension. Plus—his shop only takes 20-30 seconds to clean. "I just put my shop vac on BLOWER and shoot everything out the door," he wrote.

Harold covered two of the shop's walls with ¼" pegboard. On the remaining one, he hung storage cabinets. Then, he packed available space with his basic 510, a Shopsmith machine-mounted bandsaw, belt sander, and a jointer with its own power station. "Both the 510 and the power station have retractable castors, and I have other benchtop tools on a roll-around table," he mentioned.

Harold really likes his little shop, and his choice of equipment. In fact, he's willing to share his Shopsmith tools' experience with anyone interested. Just drop him a line along with a SASE. Write to Harold B. Cator, 129 Stallion Circle, Rochester, NY 14626.

Above. **Harold Cator, Rochester, New York, tailored his workshop to fit Shopsmith equipment.** ***Right.*** **The overhead door added to a standard 12×12' storage shed makes a flexible little shop.**

An Alabama shop you could live in

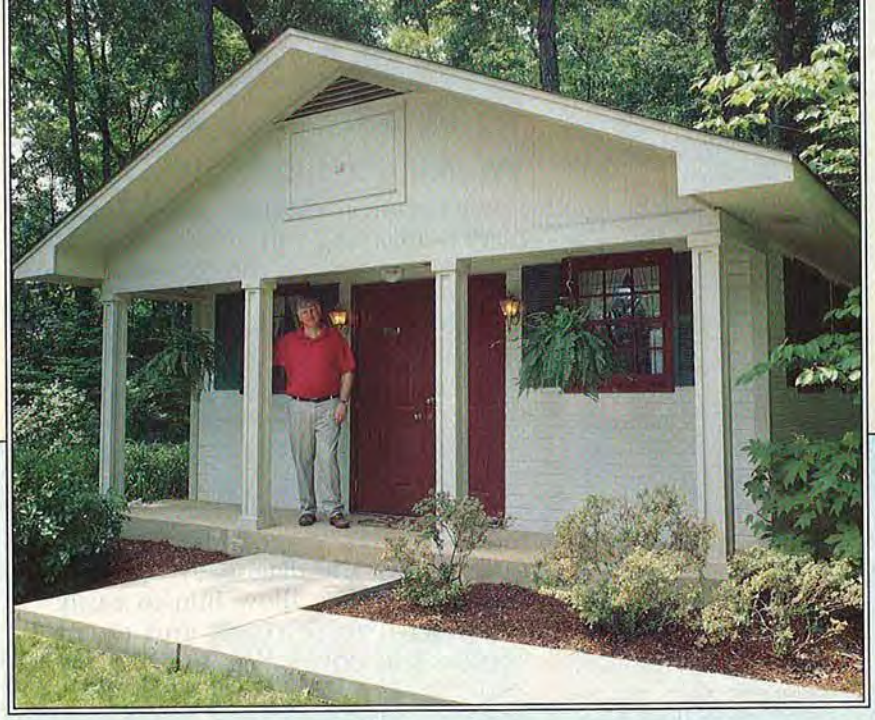
Kenneth Bragg, who lives in Huntsville, Alabama, began his letter, "After reading and admiring your article on two of your readers' shops, I had to share mine with you." He went on to explain how he wanted to gain experience by building the 20×20' shop structure, so he bought books on framing, plumbing, electricity, masonry, all that he needed to know for its design and construction. He even borrowed a transit and completely prepared the site, including the grading and the forms for the concrete. "I did everything except finish the concrete floor and install the trusses, plywood for the roof, and the

Nebraskan adds sunlight

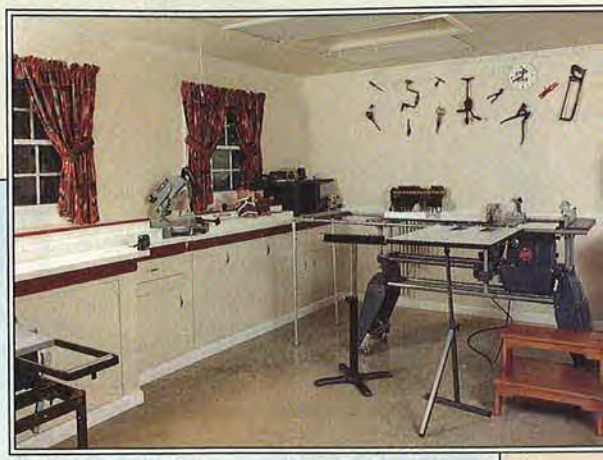
According to the letter from Allan Gassman, a home woodworker in Bellevue, Nebraska, he outgrew his shop, which was a 10×20' area at the back of his garage. He gained more space by adding an 11×15' solarium (see the two photos at *right*).

Facing southwest, the multi-paned long wall is "perfect for the winter sun" explained Allan, "and all the glass came from used metal patio doors that I recycled." With the addition, he now has 340 square feet of shop space.

For more storage, Allan dropped the ceiling 30" across the back of the new solarium. Through a pair of access doors, he now has 65 cubic ft. of overhead storage space to hold exotics and native hardwoods. "A friend of mine helped me wheelbarrow the



Left. Ken Bragg's workshop turned out to be a real home away from home, built all by himself to match his house. *Below*. You'll find few shops complete with crown molding, chair rail, baseboard, skylights, and custom curtain accents. But before you say it, yes, Ken does build things, like furniture for his Huntsville, Alabama, home!



shingles," he added. "I did all the in-between by myself, although my wife did help raise the stud walls and bolt them in place."

Ken buried the 100-amp electrical service to his shop, then ran 110-volt (on ground-fault interrupters) and 220-volt circuits around the inside at different heights so he could have plenty of power access. To finish off the inside, this ambitious woodworker installed plywood on the walls and ceiling, nailed on 4" crown molding, chair railing, and matching baseboard. For plenty of light, he installed four skylights. Out-of-sight storage is furnished by a floored attic portion reached by a pull-down, ladder-type stair.

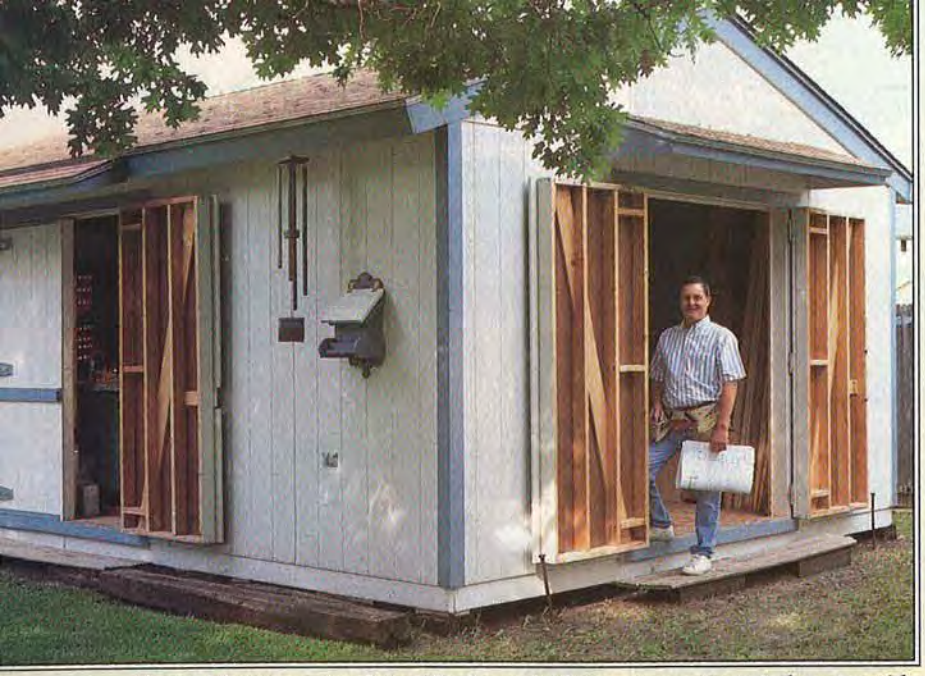
Continuing, Ken also told us that he added columns to the shop porch to match those on his home, nailed up a tongue-and-groove ceiling and crown molding, installed two brass coach lights to flank the double doors, and painted the building the same color as the house. "My wife sewed six pairs of curtains for the windows," he concluded, "then had a sign made in Olde English script that reads 'Ken Bragg's Shoppe, Established 1991'."

For more information about Ken's shop, send your questions along with a SASE to him at 5832 Jones Valley Dr., S.E., Huntsville, AL 35802.

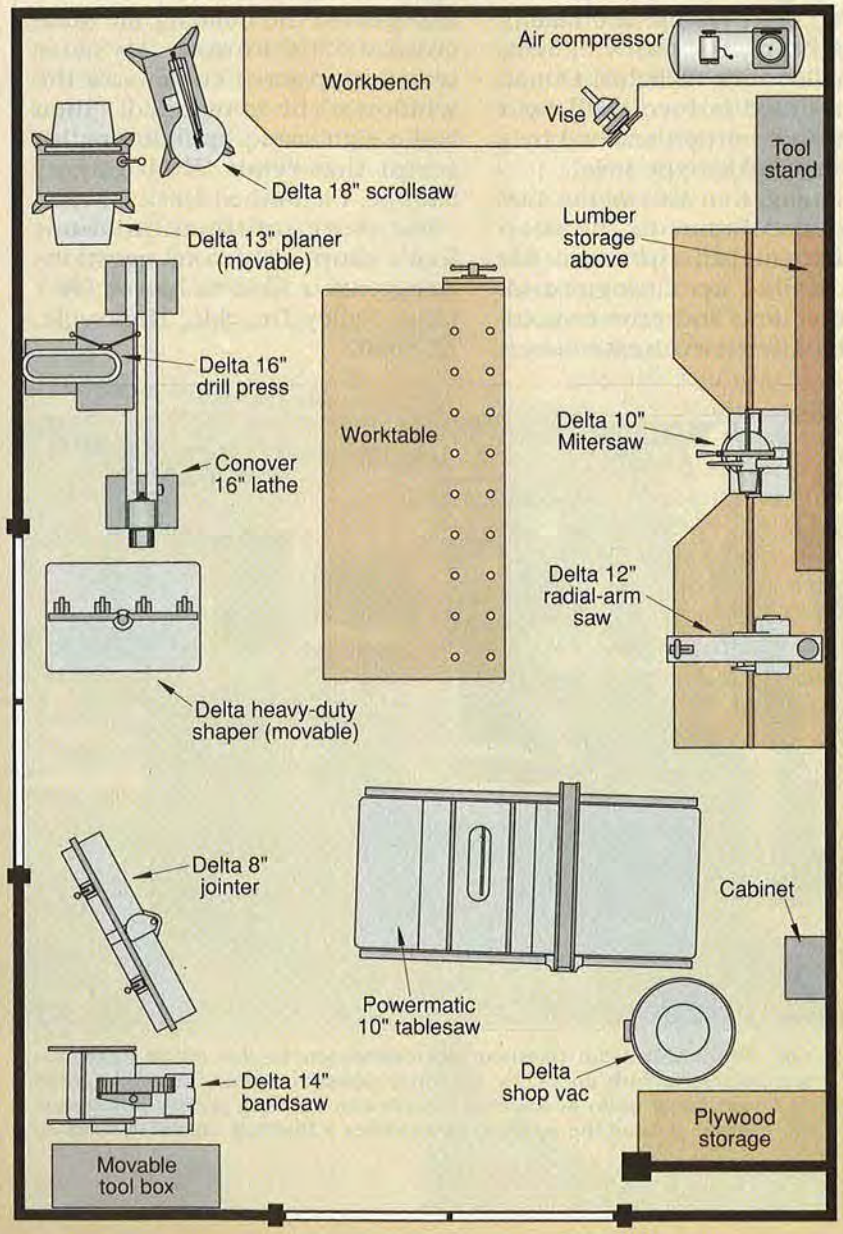
cement for the footings. Then my wife, sister, and brother-in-law helped me pour the cement floor. I then did all the framing, wiring, and finishing. That way I kept the cost down. The whole addition cost me approximately $2,000," Allan proudly noted.

If you want to find out more about Allan's shop, drop him a line, along with a SASE, at 1005 Somerset Dr., Bellevue, NE 68005.

Left. Nebraskan Allan Gassman decided to let the sun shine in on his woodworking with an 11×15' solarium addition. *Above*. Using the glass from old metal patio doors enabled Allen to save big on his sunny new shop space. Behind the wall on the right lies a 10×20' garage-area shop.



Above. **The two sets of double doors in Texan Larry Evans' shop provide super air flow to beat Dallas's summer heat. The doors also allow him to easily move and work with long stock. *Below*. Larry's shop floor plan shows how adaptable it is to different woodworking projects.**



WORKSHOPS

Working a diagonal in Texas

"I'm a fireman in Dallas," wrote Texan Larry Evans, "and your magazine helps me pass the time at the fire station. I love woodworking, and accepted your invitation to share my shop with other *WOOD*® readers."

Larry then detailed how he and some friends built the 16×24' shop shown *left* in his backyard. It has a wooden floor and is set on a foundation made of railroad ties. As you can see from the floor plan that Larry furnished (*below left*), the diagonally opposed pairs of 4' doors allow him to easily work with long stock and sheet goods. The doors also provide for great air circulation when Texas temperatures soar.

As did the other woodworkers in this article, Larry extended an invitation to come by, but added this caution: "Beware, if you just drop in, there might be a mess—if I'm on a project for my wife." And sure enough, Larry's shop was loaded with kitchen cabinets when we visited, showing that indeed he is a woodworker true to his word.

Want to learn some more about Larry's shop? Write to him with a SASE at 10835 Cassandra Way, Dallas, TX 75228.

Editor's note: *WOOD magazine has no responsibility for the design and construction of the units or idea projects from the readers shown in this article. Plans, drawings, or other details on the shops are not available from this magazine.*

Do you want to share your shop?

If you think your shop is pretty special, send us some nonreturnable snapshots along with a letter describing what you have. If we choose your shop for publication, don't be surprised if we drop by. Send your photos and details to: *Reader Shops, WOOD Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.*

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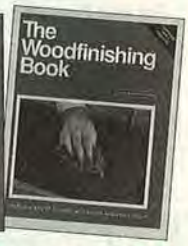

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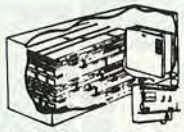

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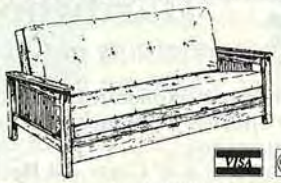

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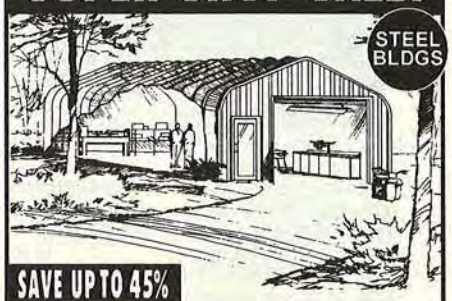

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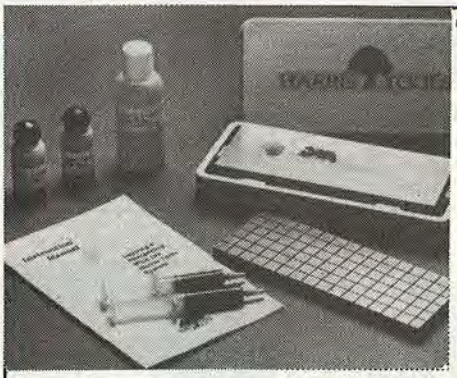

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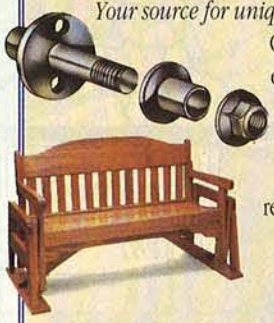

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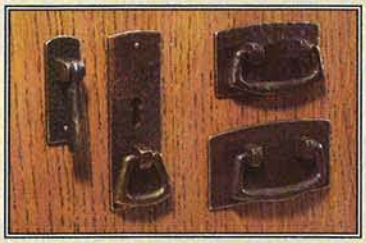

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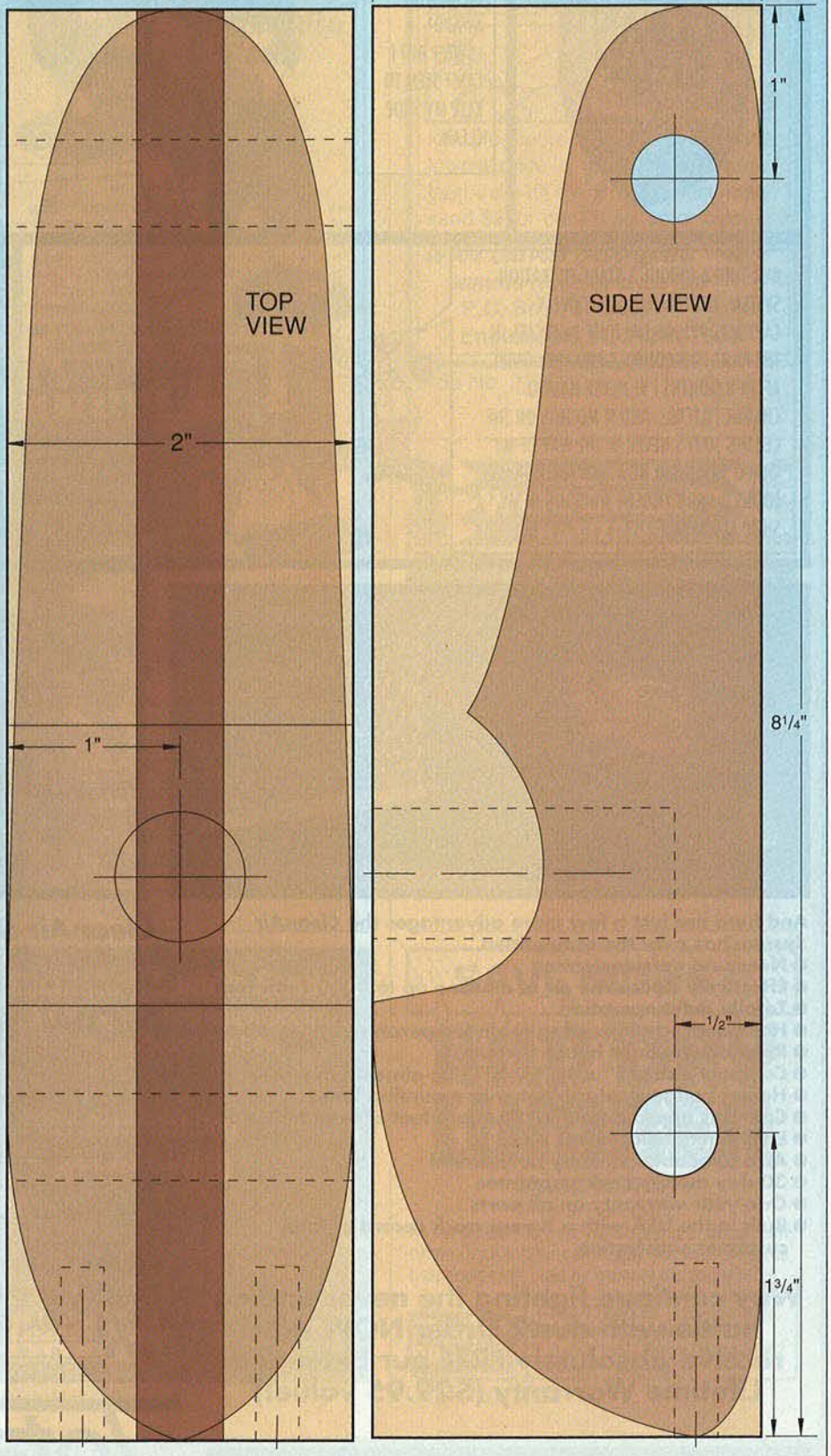

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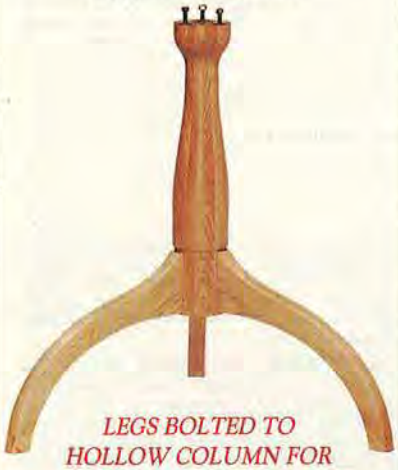

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Woodworker's Resource

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POWER TOOLS

SCROLL SAW, CRAFT & WOODWORKING CATALOG—Specialty products from the exclusive distributors of HEGNER, the precision saws with SCROLLVERGNUEGEN. Complete information on scroll saw accessories, including blades and lettering guides. Also ZYLISS Portable Vise, HEGNER Lathes, PLANO Vertical Glue Press, and more. Toll-free customer service hotline included! **AMI, LTD.** $2.00. *Circle No. 3.*

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CLAYTON MACHINE—Sand curved pieces with ease. New American-made oscillating spindle sander features many unique details. Quality built, for a lifetime of enjoyable and dependable service. Dust collector hook-up, ground steel top, dynamically balanced spindle with sealed oil-bath cam and quick change drums are all standard. Several models to choose from. Catalog. **CLAYTON MACHINE.** Free. *Circle No. 18.*

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INTERNATIONAL TOOL CORPORATION CATALOG—features the best tools & accessories at the absolute lowest prices anywhere! Whether you are a home woodworker or an industrial user, you will find an incredible selection featuring Porter Cable, Bosch, Skil, Freud, Delta, Milwaukee, Hitachi, and many, many more. We offer same day shipping, the most knowledgable sales staff and free shipping on most UPS orders in the continental U.S. **INTERNATIONAL TOOL CORP.** Free. *Circle No. 49.*

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GET TO THE FINISH LINE FASTER—with a Performax drum sander. Don't spend hours with a hand-held belt sander. Sand ultra-wide stock ultra-smooth in just minutes. Models start at $300 to $3495. Select the model that fits your budget and your needs. New metal abrasive fasteners keep sandpaper tight without re-wrapping. **PERFORMAX PRODUCTS.** $1.00. *Circle No. 78.*

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TOOLS THAT MAKE IT EASY!—Turning tools, carving tools, planes, scrapers, clamps, bits, squares, saws, stones, mallets, jigs—every tool you can think of and then some, in Constantine's 120-page full color catalog. $1 brings you every regular issue for the next 2 years. **CONSTANTINE'S.** $1.00. *Circle No. 110.*

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PERSONAL BRANDING IRONS—Brochure describes branding irons that enable you to put your name on your work quickly and easily. Made especially for branding wood, they are available with 1, 2, 3 or 4 lines of copy. Changeable date also available. **NOVA TOOL CO.** $1.00. *Circle No. 160.*

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WOODWORKERS' PLANS AND SUPPLIES—Wood projects are simplified with the high quality plans, specialty hardware and other supplies offered by Armor Products. Over 100 plans are available for making toys, desks, clocks, pool tables, lamps, chests, and other furniture. Movements, dials, moldings, ornaments, dollhouse kits, door harp supplies and tuning pins are also available. **ARMOR PRODUCTS.** $1.00. *Circle No. 315.*

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OVER 2,000 UNIQUE PROJECTS—showcased in our full-color *Woodcraft Pattern* catalog. Create decorative pieces for your home (shadowboxes, shelves and heirloom furniture), ornaments for your yard (holiday cutouts, birdhouses, mailboxes, planters, whirligigs and wind mobiles), plus our popular LAYERED ANIMAL, YARD SHADOW and SWINGER designs. The original full-size woodcraft pattern company. **THE WINFIELD COLLECTION.** $1.50. *Circle No. 480.*

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ONE STOP WOOD SHOP—Domestic and exotic hardwood plywood and lumber, marine plywood, over 30 species in stock—all under one roof. Custom cutting services to your exact specifications with little or no waste at competitive prices! We specialize in bundling and shipping. Send for catalog. **BOULTER PLYWOOD CORP.** Free. *Circle No. 512.*

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ATTENTION WOOD READERS—If you want to spend more time in your wood shop and less time shopping for wood, PROJECT-PAK is for you! Our catalog contains 60 PROJECT-PAKs of projects originally built in WOOD Magazine. Send today and enjoy hassle free woodworking. Catalog. **HERITAGE BUILDING SPECIALTIES.** $1.00. *Circle No. 550.*

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EXOTIC IMPORTED AND DOMESTIC HARDWOODS—Select from more than 100 different woods. Lumber, bowl blanks, turning squares and veneer. Samples (½" x 3" x 6") available, fully sanded. Ideal for collectors, craftsmen, furniture and cabinet makers, architects and designers. Custom cutting and thin stock manufactured. Satisfaction Guaranteed. Send for catalog. **WOODWORKERS SOURCE.** $1.00. *Circle No. 598.*

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MINI POWER TOOL CATALOG—Designed for easy reference, Ryobi's "shirt pocket" Power Tool Catalog includes our complete line of power tools, categorized by type: bench top, cordless, hand-held and stationary models. It features individual tool photographs with specifications and clear descriptions that offer specific uses and benefits. Accessories are also listed. Send for catalog. **RYOBI.** Free. *Circle No. 925.*

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ATTENTION WOOD READERS—If you want to spend more time in your wood shop and less time shopping for wood, PROJECT-PAK is for you! Our catalog contains 60 PROJECT-PAKs of projects originally built in WOOD Magazine. Send today and enjoy hassle free woodworking. Catalog. **HERITAGE BUILDING SPECIALTIES.** $1.00. *Circle No. 1040.*

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PUBLICATIONS

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MAKE MONEY IN FURNITURE RESTORATION THE MINUTEMAN WAY—Earn $200-$1000 per day stripping, repairing, refinishing, mirror resilvering, and/or veneering, at home or in shop, spare time or full time. We provide complete training; no experience necessary. Free workshop teaches you latest in furniture restoration. You have to see it to believe it! Business preview video $19.95. Send for catalog. **MINUTEMAN.** $2.00. *Circle No. 1661.*

MISCELLANEOUS

MECHANISMS FOR MAKING WOODEN BARREL PENS—Pencils/Roller Ball Pens/Fountain Pens. High quality. Low prices. Wholesale/Retail. Plus other related items. **BEREA HARDWOODS CO.** $1.00. *Circle No. 1900.*

LOOKING FOR PIERCED TIN? COME TO THE SOURCE!—70+ page color highlighted catalog introduces you to a treasury of pierced metal panels affordably priced and ready to install in your woodworking projects. Available in a wide variety of sizes, 16 different types of metal (copper & brass, tool) & over 300 designs. Custom size & design a specialty. OR all the materials and tools needed to create it yourself. Catalog includes furniture plans you can order, lantern kits, specialized metal piercing tools and MORE. **COUNTRY ACCENTS.** $5.00. *Circle No. 1910.*

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WOOD Magazine, January 1995
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WOODWORKER II	List	SALE
14" x 40T x 1"	$215	$149
14" x 30T x 1"	195	139
12" x 40T x 1"	183	129
12" x 30T x 1"	162	119
10" x 40T x 1/8" or 3/32"	156	119
30T 1/8" or 3/32"	135	99
9" x 40T	146	109
30T	125	99
*8-1/4" x 40T 3/32"	136	99
8" x 40T 3/32"	136	99
30T 3/32"	115	89
7-1/4" x 30T 3/32"	112	69
**NEW 6" x 40T 3/32"	136	89

***NEW For Sears & Makita Table Saws** **For Saw Boss

5/8" holes, boring thru 1 1/4" add $7.50
Larger at Time Basis Shipping $4.50

Outperformed 36 other premium blades.

Wood Magazine test, Sept., '93, pg. 45.

Dear Sirs,

Never before had I seen your blade in action, but I wouldn't have believed it if I had not seen it! I was so impressed with the glass-like cut the Woodworker II blade made on various wood types that I went to "Woodworking Unlimited" the next day and bought your dado set!!

David Sharp
Sugar Land, Texas

Dear Sir,

When I first saw your ads for your saw blades, I thought that if one quarter of what you were claiming was true, the blade would be worth buying. Now having bought and used one, I have found all of your outrageous claims to be justified - it's a terrific tool.

Peter Lauritzen - Carpentry
Tesuque, NM

P.S. I hope to see these available in 7 1/4" size in the future, for skilsaws

"They are right now, Peter."
Jim Forrest

Gentlemen,

I have used many different blades during my forty plus years of working, there is absolutely no comparison to any other blades on the market and your WW I & II blades.

Kenneth L. Salisbury
Huntsville, AL

FOR BETTER CUTS on all brands of blades, use our large 1/8" DAMPENERS-STIFFENERS against one side.

- Parallel and flat to .001"
- Stop vibration, flutter, CUTTING NOISE and blade ring
- Tryable and returnable for full cash refund

4"	$21
5"	24
6"	25

FULL RANGE OF OTHER INDUSTRIAL SIZES

The One Blade That Leaves A Smooth-As-Sanded Surface!!!

(From Another Customer)

In closing I would like to add that the Woodworker II blade is by far the finest saw blade that I have ever used. I also have the Forrest dado set which is without a doubt, the king of all dado sets. I work exclusively with red oak and oak veneer plywood and the dado set performs splinter-free cuts as advertised.

It is a pleasure to purchase a product that does what it is advertised to do. Thanks for making such a fine product.

Dennis R. Schule, Owatonna, MN

UPGRADE YOUR CHOP AND SLIDING MITER SAWS WITH OUR CHOPMASTER

New specs, 5° Neg. Pts. & flat, dial .001/.002 for perfect, tight, smooth, splinter-free miter joints.
NEW AVAILABLE SIZES

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Sears 8-1/4" & Delta	8-1/4" x 60T x 5/8"	170	99
Hitachi 8-1/2" DeWalt 8-1/2" & Ryobi	8-1/2" x 60T x 5/8"	179	109
Delta	9" x 80T x 5/8"	204	119
Ryobi-Makita & all	10" x 80T x 5/8"	207	129
DeWalt, Makita, B&D & Hitachi	12" x 80T x 1"	229	139
Ryobi-Makita	14" x 100T x 1"	266	179
Hitachi	15" x 100T x 1"	277	189

For good general purpose cuts use Woodworker II 30T & 40T or Woodworker I

Use small stiffener where possible

QUIET! **Also help all your other blades to cut better.** Use our 1/8" DAMPENER STIFFENERS, against one side

4" - $21
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Tryable and RETURNABLE. CUTS NOISE to 1/2 or 1/4. Stops vibration, flutter, cutting noise and blade ring. Parallel and flat to .001 • 7" and larger available.

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WOODWORKER I - For TABLE and RADIAL SAW

this trim and crosscut ALL PURPOSE blade gives scratch free POLISHED cuts on all materials RIP or CROSSCUT up to 2".

- All 60T and 3/32" *THIN* kerf 30° ATB and 5° face hook on 10" dia and under. 12" and 14" are 20° ATB 1/8" K.
- DOUBLE HARDER and 40% STRONGER carbide.
- THIN KERF:
  Saves 1/3 wood loss on each cut, radial or table. Feeds easy when used for moderate rip and crosscut on table saw. **Reduces "JUMP IN"** greatly for better "PULL CONTROL". Practically **eliminates bottom splinter** on RADIAL-CROSS CUT.
- Totally stops ALL bottom and top splinter on ply veneers in push-cut mode on RADIAL.
- Our STIFFENER STRONGLY RECOMMENDED AGAINST outside of blade only for best cuts.

Made and serviced in USA for your benefit.

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14" x 60T x 1" 1/8"	$224	$159
12" x 60T x 1" or 5/8" 1/8" K	198	139
10" x 60T x 5/8" 3/32" K	162	129
9" x 60T x 5/8" 3/32" K	156	119
8" x 60T x 5/8" 3/32" K	150	109
New 8-1/4" x 60T x 5/8" 3/32" K	150	109
New 7-1/4" x 60T x 5/8" 3/32" K	150	109

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NEW DADO KING DELUXE *DADO SET* cuts *ALL* 1/8 - 29/32 **flat bottom** grooves WITH or CROSSGRAIN all woods. OAK, BIRCH, VENEER PLYS, and MELAMINE. NO SPINTERING due to unique 4T Neg. Face fillers and 24T outside saws.
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Boring up to 1-1/4" $25 per set

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NEW 3/32 Chipper & Shims incl.

"No tearout on all five woods tested." -*Fine Woodworking July/Aug, 1991*

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DURALINE Hi-AT For TABLE & RADIAL SAW

(very good on chop saw too!) STOP SPLINTERING those SPLINTERY OAKS, HARDWOOD VENEERS and *thin* 2 SIDE LAMINATES ON PARTICLE BOARD.
FOR FASTER FEED RATES AND MORE ABSOLUTE SPLINTER CONTROL,
DURALINE Hi-AT

Note: *Fine Woodworking Editorial Nov./Dec. 1988 No. 73, pg. 65, S.N. recommends high alternating top bevel (ATB) thin kerfs and large blade stiffeners for smoothest cuts on RADIAL SAW, etc.*

Jim Forrest, President and designer microscoping cutting edge.

All 5/8" holes. Boring up to 1-1/4" $7.50 extra
Larger holes - time basis. Shipping $4.50

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330K	330 WITH CASE & 2-10 YD ROLLS PAPER	94
332	QUIKSAND 5" RNDM ORB W/STIKIT PAD	66
332K	332 W/CASE & 100 SHEETS PAPER	92
333	QUIKSAND W/HOOK & LOOP, DUSTLS	73
333K	333 W/CASE & 50 SHEETS PAPER	99
334	QUIKSAND W/STIKIT, DUSTLESS	73
334K	334 W/CASE & 100 SHEETS PAPER	99
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340K	340 WITH CASE & 10 SHEETS PAPER	72
345	SAW BOSS 6" CIRCULAR SAW	104
347	7 1/4" FRAMERS SAW 15 AMP, 10.25 LBS	127
351	3" X 21" BELT SANDER	148
351K	351 WITH 10 ASST BELTS & BELT CLNR	158
352	3" X 21" BELT SANDER W/DUST BAG	151
352K	352 WITH 10 ASST BELTS & BELT CLNR	161
9352VS	3" X 21" VS DSTLS BELT SANDR W/CSE	165
9352VSK	9352VS WITH 10 ASST BELTS & CLNR	175
360	3" X 24" BELT SANDER W/DUST BAG	189
360K	360 WITH 10 ASST BELTS & BLT CLNR	200
361	3" X 24" BELT SANDER	182
361K	361 WITH 10 ASST BELTS & BLT CLNR	193
362	4" X 24" BELT SANDER W/DUST BAG	195
362K	362 WITH 10 ASST BELTS & BLT CLNR	208
363	4" X 24" BELT SANDER	191
363K	363 WITH 10 ASST BELTS & BLT CLNR	204
447	7 1/4" FRAMERS SAW W/BRAKE 15 AMP	137
505	1/2 SHT FIN SANDER	123
505K	505 W/CASE & 2-10 YD ROLLS PAPER	159
550	*NEW POCKET CUTTER*	178
556	BISC JOINER W/CASE & TILT FENCE	168
556K	556 WITH 1000 ASSORTED BISCUITS	190
690	1 1/2 HP ROUTER W/1/4" & 1/2" COLLETS	132
690K	690 W/CS, EDGE GUIDE, & TEMP GD KIT	179
9690	1 1/2 HP ROUTER W/CASE	144
691	1 1/2 HP "D" HANDLE ROUTER	148
691K	691 W/CASE, EDGE GD & TEMP GD KIT	204
693	PLUNGE BASE ROUTER, 1 1/2 HP	169
695	SHAPER TABLE W/ 1 1/2 HP ROUTER	216
696	SHAPER TABLE	128
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2621	3/8" VSR DRILL, 0-1200 RPM, KEYLESS	89
5008	DOVETAIL TEMPLATE	78
5009	MORTISE & TENON JIG	47
5116	OMNI JIG	253
6931	PLUNGE ROUTER BASE	73
7116	*NEW 24" OMNIJIG*	233
7310	LAMINATE TRIMMER, 5.6 AMP	88
97335	5" RANDOM ORBIT SANDER, VS W/CSE	132
7335K	7335 W/CS, DUST EX SYS, 100 SHTS PPR	165
97336	6" RANDOM ORBIT SANDER, VS W/CSE	137
7336K	7336 W/CS, DUST EX SYS, 100 SHTS PPR	169
7518	3 1/4 HP FIXED BASE ROUTER-5 SPEED	267
7519	3 1/4 HP FIXED BASE ROUTER-1 SP	233
7538	3 1/4 HP PLUNGE ROUTER-1 SPEED	235
7539	3 1/4 HP PLUNGE ROUTER-5 SPEED	269
7549	TOP HANDLE BAYONET SAW	134
7549K	7549 W/CASE & 10 BLADES	152
7700	*NEW 10" LASERLOC MITER SAW*	338
7700K	7700 WITH BAG, VISE & EXT WINGS	377
9118	PORTA PLANE KIT W/CASE, CRBD BLD	209
9314	4 1/2" TRIM SAW KIT	152
9315	7 1/4" BUILDERS SAW KIT	139
9345	SAW BOSS 6" CIRCULAR SAW KIT	123
9347	7 1/4" FRAMERS' SAW W/STEEL CASE	138
9637	TIGER SAW VAR SPD RECIP SAW KIT	144
9853S	12V CRDLS KIT W/2 BAT, CASE	169
97310	LAMNT TRIMMR KIT W/4 BASES & CS	194

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31-460	4" BELT/6" DISC SANDER	127
34-182	TENONING JIG	84
37-070	*NEW* 6" VS BENCH JOINTER	248
40-560	16" SCROLL SAW, 2 SPEED	178

Milwaukee

0407-1	SAME AS ABOVE BUT 12 VOLT	173
6256	TOP HANDLE JIG SAW	144
6491	10" MITER SAW W/BAG & 80T BLADE	288
6507	VAR SPEED SAWZALL W/BLADES & CSE	144
6508	SAME AS 6507 BUT W/PERMANENT CRD	144
6528	SAME AS 6527 BUT W/PERMANENT CRD	172

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SKS	NARROW CROWN STAPLER 5/8" - 1 1/2"	269
SLP20	BRAD NAILER W/CASE 5/8"-1 5/8" CAP	268
SN325+	STICK NAILER 1 7/8"-3 1/4" CAPACITY	418
SCN200R	ROOFING NAILER	458

AEG

TXE150	6" VS DSTLS RANDOM ORBIT SANDER	138
BSPE100	BARREL GRIP JIG SAW, VS W/CASE	155
FSPE100	TOP HANDLE JIG SAW, VS W/CASE	155
HBSE75S	3" X 21" BELT SANDER, VAR SPEED	174
EZ581	CORDLESS CAULKING GUN	159

DEWALT

DW100	3/8" DRILL, 0-2500 RPM, 4 AMP	68
DW318K	4.5 AMP HVY DTY JIG SAW KIT W/CS	147
DW420	5" RANDOM ORBIT SANDER, PSA	69
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DW430	3" X 21" DUSTLESS BELT SANDER	164
DW431	3" X 21" DSTLS BELT SANDER VAR SP	180
DW610	1 1/2 HP ROUTER, 9 AMP	147
DW615	1 1/4 HP PLUNGE ROUTER, VAR SP	158
DW625	3 HP HVY DTY PLUNGE RTR, VAR SP	269
DW675K	HEAVY DUTY PLANER KIT	164
DW682K	BISCUIT JOINER KIT	224
DW944K2	9.6V CORDLESS KIT W/2 BATTERIES	154
DW945K2	12V CORDLESS KIT W/2 BATTERIES	169
DW972K2	*NEW* 12V CRDLS KIT W/2 BATTERIES	189
DW991K	14.4V CRDLS KIT W/BATTERY & CASE	199

HITACHI

DS10DVAK	12V CRDLSS DRILL KIT W/1 BATTERY	149
DS10DVAKBE	12V CORDLESS DRILL KIT W/2 BAT	192
C8FB2	8 1/2" SLIDE COMPOUND MITER	579
C10FC	10" COMPOUND MITER SAW	259
P20SB	3 1/4" PLANER, 3.4 AMP	92
TR12	3 HP PLUNGE ROUTER	188
M12V	3 HP VAR SPEED PLUNGE ROUTER	235
NT45A	18 GA. FINISH NAILER W/CASE	275
N5008AA	STANDRD CRWN CONSTRCTN STAPLR	319
NV83A	FULL HEAD CONSTRCTN COIL NAILER	414

BOSCH

1003VSR	3/8" VSR DRILL W/KEYLESS CHUCK	92
1194VSR	1/2" VSR, 2 STAGE HAMMER DRILL	139
1273DVS	4" X 24" VS DUSTLSS BELT SANDER	219
1370DEVS	6" VS DSTLS RNDM ORB SNDR	224
1584VS	CLIC BARREL HANDLE JIG SAW, VS INCLUDES FREE CASE	159
1587VS	TOP HANDLE JIG SAW, VS W/CASE	159
1604	1 3/4 HP ROUTER	142
1608	LAMINATE TRIMMER	95
1609KX	DELUXE INSTALLERS KIT W/4 BASES	224
1613EVS	2 HP VAR SP PLUNGE ROUTER INCLUDES FREE EDGE GUIDE	199
1615EVS	3 1/4 HP VAR SP PLUNGE ROUTER *INCLUDES FREE EDGE GUIDE!*	289
3054VSR	12V CORDLESS KIT W/2 BAT, CASE INCLUDES FREE 15 PC BIT SET	178
3283DVS	5" VS DUSTLESS RANDOM ORBIT INCLUDES 5 XTRA SANDPAPER SHTS	95
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2736-04	12V VSR CORDLESS DRILL KIT WITH 15 PIECE BIT SET	135
3400	10" TABLE SAW W/FREE CARB BLADE	179
5657	7 1/4" CIRCLE SAW W/6 CARBIDE BLDS	119
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JS102	BISC JOINER W/TILT FENCE & DUSTBG	189
FT2000E	3 1/2 hp RTR VS (5205) AFTER REBATE	175
EB100	EDGE BANDING SYSTEM	209
EDS132	13.2V CRDLS DRILL KIT W/2 BAT	215
FC107	7 PC CARBIDE FORSTNER BIT SET	84
F410	10" X 40T QUIET BLADE	49
F810	10" X 80T QUIET BLADE	73
LM72M010	10" X 24T FLAT TOP RIP BLADE	36
LU82M010	10" X 60T CROSSCUT RIP BLADE	39
LU84M010	10" X 50T ATB COMBO BLADE	40
LU85M010	10" X 80 T ATB FOR MIRROR FINISH!	58
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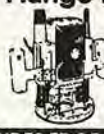

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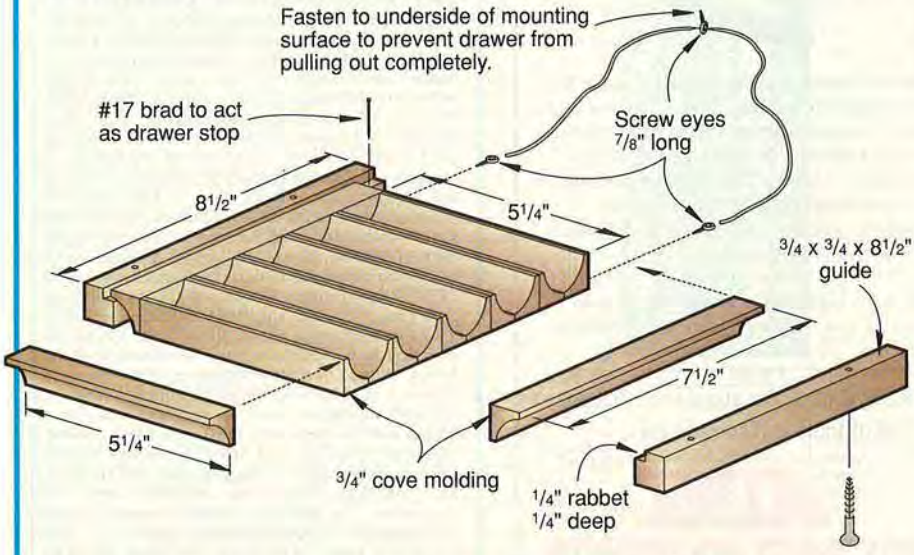
Scrollsaw-blade drawer

SURPRISE! IT'S MADE OF COVE MOLDINGS


Fasten to underside of mounting surface to prevent drawer from pulling out completely.
#17 brad to act as drawer stop
Screw eyes 7/8" long
8 1/2"
5 1/4"
3/4 x 3/4 x 8 1/2" guide
7 1/2"
5 1/4"
3/4" cove molding
1/4" rabbet 1/4" deep

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To build the drawer, glue (use epoxy) and clamp the pieces together. Then, screw the guides underneath your bench. A string keeps the drawer from sliding out too far, and a brad nailed to one guide stops the drawer flush with the front of the bench.

Design: James R. Downing Photograph: Hopkins Associates Illustration: Roxanne LeMoine

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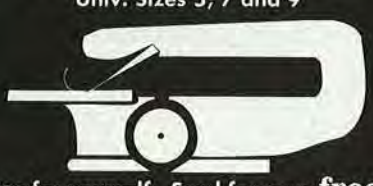

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DELTA TOOLS

Model	Description	List	Sale
23-700	Wet/Dry Grinder	234	155
23-680	6" Bench Grinder 1/4 HP	86	75
11-950	8" Drill Press	199	135
31-050	1" Belt sander 2.0 amp	104	75
31-460	4" Belt/Disc Sander	198	129
31-340	1" Belt/8" Disc Sander	268	204
40-560	16" 2 speed Scroll Saw	266	178
11-990	12" Bench Drill Press	276	195
11-090	32" Radial Bench Drill Press	399	305
43-355	3/4" Shaper 1-1/2 HP	964	759
43-505	1/2" Bench Router/Shaper	399	285
22-540	**12" Bench Top Planer**	Sale	389
36-220	10" Compound Mitre Saw	350	229
28-180	Bench Band Saw	232	158
28-190	NEW 12" Band Saw	465	389
40-640	20" Bench Scroll Saw	466	295
37-070	NEW 6" w/spd Bench Jointer	337	249
14-650	Hollow Chisel Mortiser	668	279
46-700	12" Wood Lathe	548	445
33-990	10" Radial Arm Saw	818	645
37-280	6" Motorized Jointer	488	389
50-179	3/4 HP 2 stage Dust Collector	483	345
33-055	8-1/4" Sawbuck comp w/legs	865	615
34-330	8-1/4" Table Saw 13 amp	343	245
32-100	Stationary Plate Jointer	645	255
36-040	8-1/4" Compound Mitre Saw	224	149
34-915	30" Unifence	385	229
34-897	50" Delta Unifence	525	285
36-755	10" Tilt Arbor Saw	1264	969
34-444	Contractors Table Saw	812	619
17-900	16-1/2" Floor Drill Press	462	399
33-060	"Sidekick" Miter Saw	510	375
14-070	14" Floor Drill Press	450	349
37-190	NEW 6" Deluxe Jointer	554	479
36-275	NEW 8-1/4" Builders Saw	444	265
36-210	NEW 10" Compound Mitre Saw	438	255
36-070	NEW 10" Mitre Saw	284	169

The following Delta Tools have Rebates !
Rebates start 9-15-94
$50 Rebate

28-283	14" Band Saw w/enc. stand	910	745
28-283K	28-283 Saw w/28-843 rip fence	Sale	789
34-445	34-444 Saw w/30" Unifence	1200	775
34-445K	34-445 Saw w/34-914 table board		809

$75 Rebate

22-661	13" Planer w/ 2HP motor	1513	1189
37-154	DJ15 6"Jointer w/3/4HP motor	1451	1165

MILWAUKEE TOOLS

6527	NEW Sawzall with case	320	172
6528	above Sawzall w/wired cord	316	172
0407-1	**12V Drill w/kyls chuck & 2 batt**		172
0395-1	9.6V cordless Drill with case	290	158
0224-1	3/8" Drill 4.5 amp magnum	227	124
0234-1	1/2" Drill 4.5A mag 0-850 rpm	237	128
0244-1	1/2" Drill 4.5A mag 0-600 rpm	237	128
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	198	109
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	195	109
0375-1	3/8" close quarter Drill	237	129
0379-1	1/2" close quarter Drill	268	152
6546-1	cdls Scrwdvr 200 & 400 rpm	141	84
5399	1/2" D-hdle Hammer Drill Kit	332	194
6750-1	Drywall Gun 0-4000 5 amp	171	94
6507	Original SawZall with case	264	144
8977	Variable temp. Heat Gun	131	79
5397-1	3.8" var. spd Hammer Drill Kit	255	142
5371-1	1/2" var. spd Hammer Drill Kit	340	188
3107-1	1/2" v/spd right angle Drill Kit	399	219
6754-1	Drywall Gun 0-4000 5.4 amp	196	114
3300-1	1/2" var. spd right angle Drill	356	194
5680	Router 2 HP - 12 amp	362	198
0235-1	1/2" Drill w/keyless chuck	237	128
6142	4-1/2" Grinder w/case & access.	208	124
6749-1	Drywall Gun 0-2500 5.4 amp	218	128
6365	7-1/4" Circular Saw 13 amp	218	122
6366	6365 w/fence & carbide blade	228	129
6368	6365 w/fnce,carb. blde,& cse	249	139
6377	7-1/4" Worm Drive Saw	330	189
6256	Top Handle Jig Saw	264	148
6490	10" Mitre Saw	444	255
6491	**6490 w/ carbide blade & bag**	532	275

FREUD CARBIDE TIPPED SAW BLADES
5/8" Bore - Industrial Grade

Item	Description	Teeth	List	Sale
LU72M010	Gen Pur. A.T.B.	10" 40	69	39
LU82M010	Cut-off	10" 60	93	49
LU84M011	Comb	10" 50	78	42
LU85M010	Super Cut-off	10" 80	115	59
LM72M010	Ripping	10" 24	69	38
LU73M010	Cut off	10" 60	84	45
LU87M010	Thin Kerf	10" 24	72	39
LU88M010	Thin Kerf	10" 60	88	45
LU98M010	Ultimate	10" 80	128	68
LU91M010	Compnd Mitre	10" 60	88	54
F410	NEW Quiet Blade	10" 40	95	49
F810	NEW Quiet Blade	10" 80	135	74
TK303	7-1/4" Finishing	40	38	22
TK906	10" Combo	50	53	29
SD306	6" Dado - Carbide		215	112
SD308	8" Dado - Carbide		230	119
SD506	6" carbide w/case & shims		292	155
SD508	8" carbide w/case & shims		344	168
F0	1-3/4" x 5/8" Biscuit 1000 Qty		43	29
F10	2-1/8" x 3/4" Biscuit 1000 Qty		43	29
F20	2-3/4" x 1" Biscuit 1000 Qty		45	29
FA	Assorted Biscuits 1000 Qty		45	29
FB100	16 piece Forstner Bit Set		338	189
94-100	5 pc. Router Bit Door System		320	159
TR215	NEW 10" Slide Cmpd Mitre Saw		688	359
JS102	NEW Biscuit Jointer w/adj fnc&cs		355	179

These FREUD Tools have a $30.00 Rebate !
Price shown is before rebate.

FT2000E	3-1/4 HP v/sp Plunge Router	410	205
JS100	Biscuit Jointer with case	334	164

MAKITA TOOLS

Model	Description	List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	128	64
6172DWE	3/8" v/spd Drill Kit w/ 2 batt	220	109
5090DW	3-3/8" Saw Kit 9.6 volt	270	145
ML900	Incandescent Flashlight 9.6V	Sale	37
DA391DW	3/8" angle Drill Kit 9.6 volt	312	175
6012HDWE	2 speed Drill Kit w/2 batt.	243	135
6093DWE	6093DW Drill Kit w/2 batteries	270	139
6095DWE	**6095DW Drill Kit w/2 batteries**		139
6201DWE	NEW 9.6V Drill Kit w/2 batt.	298	158
6211DWE	12V Drill Kit with 2 batteries	330	169
632007-4	9.6 volt Battery	47	30
632002-4	7.2 volt Battery	39	28
5007NBA	7-1/4" Saw w/electric brake	263	135
5008NBA	8-1/4" Saw w/electric brake	346	195
B04510	1/4 sheet Pad Sander	106	59
9900B	3" x 21" Belt Sander w/bag	344	175
9924DB	3" x 24" Belt Sander w/bag	329	184
4301BV	Orb. var. spd Jig Saw 3.5A	292	158
JR3000V	var. speed Recip Saw w/case	252	135
LS1020	10" Mitre Saw 3.5 amp	630	355
9820-2	Blade Sharpener	394	205
N1900B	3-1/4" Planer with case	244	129
9514B	4" Disc Grinder 4.6 amp	111	59
B04550	1/4 sheet Pad Sander w/bag	98	52
DA3000R	3/8" Angle Drill	314	179
2708W	8-1/4" Table Saw	585	298
2711	10" Table Saw with brake	1067	565
6404	3/8" Drill Rev. 0-2100 rpm	112	58
6510LVR	3/8" Drill Rev. 0-1050 rpm	168	93
6820V	0-4000 rpm Drywall Gun	171	99
6013BR	1/2" Drill Rev. 6 amp	280	149
9401	4" x 24" Belt Sander w/bag	378	229
4302C	var. speed Orbital Jig Saw	351	199
5077B	7-1/4" Hypoid Saw	281	155
5007NB	7-1/4" Circular Saw 13 amp	232	124
5007NBK	5007NB Saw w/ plastic case	Sale	129
LS1011	**10" Slide Compound Saw**	946	509
3612BRA	3 HP Plungr Router w/ brake	524	175
LS1211	New 12" Slide Cmpd Saw	1550	865

SIOUX TOOLS

8030	New 3/8" var/spd Drill	250	145
8000	3/8" var/spd close qtr Drill	201	125
690	5" Air Random Orbit Sander	139	132

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	448	298
SN325	Nailer 1-7/8" - 3-1/4"	665	419
SLP20	New Pinner w/cse 5/8 -1-5/8"	399	269
SKS	Stapler 5/8" - 1-1/2"	390	269
SN70	Fram. Nailer Clip Hd 2"-3-1/2"	690	475
SN60	Fram. Nailer-Full Hd 2"-3-1/2"	638	445
SFN40	NEW Finish Nailer 1-1/4 - 2-1/2	571	385

BOSTITCH AIR NAILERS

N80S-1	Stick Nailer ..... Super Sale		348
RN45	Coil Roof Nailer 3/4 - 1-3/4	845	409
N60FN-2	Finishing Nailer	650	335
T31	Brad Nailer	281	145
CWC100	1 HP Pancake Compressor	463	289

SKIL SIZZLERS

77	7-1/4" Worm Drive Saw	257	144
77M	NEW 77 Mag Worm Saw	300	164
2735-04	12 volt cordless Drill Kit	249	144
2736-04	2735-04 with keyless chuck	269	145
1605-02	Biscuit Joiner w/case	221	129
3400	10" Table Saw - Bench Top	270	178

PANASONIC CORDLESS

EY6205EQK Same as EY6205BC but comes with **Ironman** battery 368 192

EY6207BC NEW 12 volt 1/2" Drill w/keyless chuck var. speed w/15 min. charger & case 420 222

EY6282EQK Var. spd 9.6 volt Drill with 15 min. charger, case & NEW **Ironman** battery 315 169

EY62821DKW 9.6 volt Drill Kit w/2 batt. 395 162

NEW PREDATOR DRILLS

EY6181CRKW NEW 9.6V Compact Drill Kit w/2 batt - 10% more pwr than EY62821DKW 305 158

EY6100CRKW NEW 12 volt Drill Kit with 2 batteries, 1 hour charger, & case 358 185

EY6100CQKW Same as **EY6100CRKW** but has 15 minute charger 420 198

EY6100EQK NEW 12 volt Drill kit with NEW **Ironman** battery, 15 min. charger, & case 375 199

EY6100EQKW Same as **EY6100EQK** but w/2 **Ironman** batteries... 473 225

PASLODE IMPULSE GUNS

IM250	Trimpulse Finish Nailer Kit	849	565
IM325	Impulse Framing Nailer Kit	849	565

WAGNER PAINT & SPRAYER PRODUCTS

230HD	Power Painter/Sprayer	100	84
255	Airless Kit	180	130
375E	Airless System	195	159
505	High performance Airless Painter	440	369
HVLP	Fine coat finishing HVLP System	195	155
CS2000	Pro fine finish HVLP System	339	269

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0241SK
Brad Nailer 3/8"-1 9/16"
Same as Senco SLP-20
List 180 Sale 98

0250SK
Brad Nailer 3/4"-2"
List 296 Sale 164

0626SK
1/4" Crown Stapler 3/8"-1"
List 194 Sale 104

0635SK
1/4" Crown Stapler 1/2"-1-3/8"
Same as Senco SKS
List 310 Sale 175

EZ-1
New Multi-purpose nailer & stapler
List 180 Sale 99

Above Nailers come w/case, fasteners, oil & wrenches

0565T
Angle Finish Nailer 1"-2-1/2"
List 386 Sale 205

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#34-080
10" MITRE BOX
XTRA SPECIAL
198.00

DEWALT TOOLS

Model	Description	List	Sale
DW364	7-1/4" Circ. Saw w/brake	285	154
DW945K-2	12V cdls Drill Kit w/2 batt	309	169
DW944K-2	9.6V cdls Drill Kit w/2 batt	283	165
DW610	1-1/2 HP 2 handle Router	274	149
DW411	1/4 sheet Palm Sander	97	58
DW100	3/8" Drill, 4 amp,0-2500 rpm	118	68
DW682K	**Biscuit Joiner with case**	429	219
DW705	12" Compound Mitre Saw	706	379
DW615	1-1/4 HP Elec. Plge Router	290	158
DW625	3 HP var. spd Plunge Router		269

DW625 Router comes with FREE DW6966 Fine Depth Adjuster.

DW675K	3-1/8" Planer with case	289	164
DW431	3 x 21 w/spd Belt Sander	331	179
DW444	6" Ran Orb Sander-PSA pad	266	149
DW443	DW444 w/hook & loop pad	266	149

NEW DEWALT CORDLESS DRILLS

DW952K	3/8" v/spd w/one 9.6V batt	280	159
DW953K	3/8" v/spd w/one 12V batt	306	175
DW962K-2	3/8" v/sp w/two 9.6V XRbatt	324	179
DW972K-2	3/8"v/sp w/two 12V XRbatt	352	189
DW991K	3/8"v/sp w/one 14.4V XRbatt	370	199

Above drill kits come w/charger & steel case!

PORTA NAILER

401	Porta Nailer complete	265	205
501	Face Nailer complete	265	205

WERNER LADDERS

6205	5' Fiberglass	199	75
6206	6' Fiberglass	225	82

HITACHI TOOLS

P12R	12-9/32" Planer	1470	789
P12RA	Planer/Joiner	1940	989
C8FB	8-1/2" Slide Compound Saw	1400	599
G12SA	4-1/2" Grinder 6.9 amp	160	89
DS10DVA	NEW 12V Cordless Drill Kit	393	199
NR83A	Fram Nailer 2 - 3-1/2 Full Head	700	395
NR83AA	Framing Nailer 2 - 3-1/2	750	419
NT65A	16 ga. Brad Nailer 1 - 2-1/2	610	335
NV45AB	Coil Roofing Nailer 7/8 - 1-3/4	750	415
NV83A	Coil Nailer 2 - 3-1/4	750	419

BIESEMEYER FENCES

B-50	50" Commer. Saw Fence	345	298
T-SQUARE 52	52" Homeshop Fence	279	238
T-SQUARE 40	40" Homeshop Fence	259	208
T-SQUARE 28	28" Homeshop Fence	249	198

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Open Cap	List	Sale	Box of 6
#0	8"	4-1/2"	19.76	11.75	58.00
#1	10"	6"	22.63	12.50	68.00
#2	12"	8-1/2"	25.95	14.50	78.00
#3	14"	10"	32.88	18.00	99.00

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	14.87	7.60	88.95
52	1/2" Black Pipe Clamps	12.40	6.70	71.50

BOSCH

Model	Description	List	Sale
1587VS	NEW Top Hand "CLIC" Jig Saw	292	149
1584VS	NEW Barrel "CLIC" Jig Saw	285	149
Bosch Metal Case for above Jig Saws		34	32
Bosch 30 blade assortment for Jig Saws			28.99

SUPER SPECIAL
1584VS or 1587VS with steel case and 30 Bosch blades..... **Sale** 189

1942	Heat Gun 600° - 900°	125	78
1272D	3" x 24" Belt Sander with bag.	375	204
1273D	4" x 24" Belt Sander with bag.	380	215
11-212VSR	Bulldog 3/4"SDS Rtry Drill	390	209
1347AK	4-1/2" Grinder w/cs & access.	185	109
1348AE	5" Grinder 8.5 amp	225	129
1194VSR	1/2" var. speed Hammer Drill	282	149
1194VSRK	above Hammer Drill w/case.	313	169
1608	5.6 amp Laminate Trimmer	168	95
1609K	Lam Installers Kit with 1609	343	184
1609KX	Deluxe Installers kit	405	228
1604A	1-3/4 HP 2 Handle Router	250	139
1604AK	same as above w/cse & acc	318	185
1606A	1-3/4 HP D-handle Router	295	179
3258K	3-1/4" Planer with steel case	273	169
3270DVS	3 x 21v/spd belt sander w/ bag	270	165
1273DVS	var. spd 4" x 24" Belt Sander	415	219
1614	1HP Plunge Router	245	149
1614EVS	1-1/4HP v/spd Plge Rtr	283	159
1613	1-3/4 HP Plunge Router	316	169
1613EVS	2HP v/sp Plunge Router	194	
1615	3 HP, Plunge Router	430	259
1615EVS	3 HP v/spd Plge Router	505	278
1632VSRK	Recip Saw 8.4A orb-v/spd	225	154
3050VSRK	9.6V cdls v/sp Drill Kit comp	288	149
3051VSRK	3050VSRK w/keyless chuck	299	149
1370DEVS	6" Random Orbit Sander	427	224
3283DVS	5" Random Orbit Sander	169	98
3283DVSK	3283DVS Kit complete	199	118
B1650K	**NEW** Biscuit Joiner	289	155
B7000	NEW Corner Detail Sander	122	68
B4050	NEW In Line Jig Saw	199	119

AEG POWER TOOLS

Model	Description	List	Sale
TXE150	6" var/spd Ran Orb Sander	304	139
HBSE75S	3"x21" var/spd Belt Sander	309	175
BSPE100X	Top Handle Jig Saw w/case	286	155
FSPE100X	Barrel Grip Jig Saw w/case	274	155

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	118	65
79-034	Workmate 400	181	109
2694	7-1/4" Super Sawcat w/case	285	152
2695	8-1/4" Super Sawscat w/case	328	162

DAVID WHITE

LP6-20	Sight Level package - 20x	310	195
LP6-20XL	LP6-20 w/9056 tripod & 7620 rod		259
LT8-300	Level Transit - 26x	695	445
LT8-300P	above Level w/optical plum	821	518
LT6-900	Level Transit - 20x	389	249
ALT6-900A	Automatic Level - Transit -18x	638	409
ALTP6-900A	above Level w/tripod & rod	708	469
ALP6-18HD	above Level w/tripod & rod	570	375
ML100I	NEW Laser Level	1099	945
ML100	NEW Laser Level w/detector	1249	1075

RYOBI SPECIALS

TS-254	10" Mitre Saw	440	209
RE600	3 HP Plunge Router	500	235
BE321	3" x 21" var. spd Belt Sander	310	139
TFD222VRK	12V cordless Drill Kit	365	155
TFF100	Flashlight uses 7.2,9.6,12v battery		19.95
BT3000	10" Table Saw with stand	1125	529
TSS220	8-1/2" Slide Comp. Saw	966	445
DS1000	Detail Sander	90	44
AP12	12" Bench Planer	884	395
BS900	9" Bench Band Saw	340	169
OSS450	**Oscilating Spindle Sander**	340	159
ML618	NEW Mini Lathe var/spd	418	219
DC500	NEW Detail Carver	120	75

LAMELLO BISCUIT JOINTERS

TOP 10	"Simply the Best"	699	538
STANDARD 10	"Professionals Choice"	499	399
Msx636 FEIN	Triangle Sander Kit	Sale	185
LPN672 PONY	Air Palm Nailer w/glove	Sale	94.99

QUAL-CRAFT PRODUCTS

2200	Pump Jack	79	58
2201	Pump Jack Brace	30	20
2203	Pump Jack guard rail holder	31	21
2204	Workbench & rail holder combo	53	39

Buy any 6 (can be assort.) deduct 10%

2601	Wall Jack	167	108

Lots of 4 deduct additional 10%

PORTER CABLE

690	1-1/2 HP Router 8 amp	260	138
691	1-1/2 HP Router D-handle	285	155
695	1-1/2 HP Router/Shaper	400	223
696	HD Shaper Table	230	129
351	3" x 21" Belt Sander w/o bag	280	154
352	3" x 21" Belt Sander with bag	290	159
360	3" x 24" Belt Sander with bag	365	194
361	3" x 24" Belt Sander w/o bag	345	189
362	4" x 24" Belt Sander with bag	380	205
315-1	7-1/4" Top Hdle Circular Saw	225	118
97751	1/2" v/spd Hammer Drill w/cse	270	155
9118	Porta Plane Kit 7 amp	390	215
505	1/2 sheet Pad Sander	230	128
6611	3/8" var. speed Drill 5.2 amp	220	125
6614	1/2" var. speed Drill 0-750 rpm	230	128
6615	7514 with keyless chuck	230	128
7549	Top handle Jig Saw 4.8 amp	270	135
330	Speed Block Sander 1/4 sheet	110	60
555	Plate Biscuit Jointer with case	320	159
556	555 jointer w/5556 tilt lence	Sale	165
345	6" Saw Boss 9 amp	190	104
9345	345 comp, w/cse & carb blde	220	124
9647	TIGER CUB Recip. Saw	210	119
9637	Full var/spd Recip Saw 8 amp	270	148
7519	3-1/4 HP Router 2 Handle	445	239
7518	3-1/4 HP 5 speed Router	510	268
7538	3-1/4 HP Plunge Router	445	239
7399	5.6 amp Drywall Cutout Unit	140	84
7310	5.6 amp Laminate Trimmer	165	95
97310	Laminate Trimmer Kit comp	360	198
7335	5" var. spd Rndm Orbit Sndr	245	132
7336	6" var. spd Rndm Orbit Sndr	250	137
73333	Dust Collection system	31	24.50
693	1-1/2 HP Plunge Router Base	320	174
6931	Plunge Router Base	125	77
7539	3-1/4HP v/spd Plunge Router	510	269
9852	12V 3/8"Drill w/cse 0-1000rpm	280	154
9853	9852 with keyless chuck	280	154
9855	12V 1/2" 2 spd.v/sp Drill w/cs	335	188
8500	12V battery for above drills	Sale	45

New Tools by Porter Cable

332	Palm Grip Rndm Orbit Sander	120	69
333	above Sander with dust bag	135	75
334	333 Sander with PSA pad	135	74
340	1/4 Sheet Orb Sndr w/dust p/u	89	55
352VS	3x21 Belt Sander w/bag v/spd	305	169
7116	24" Omni Jig	535	294
550	Pocket cutter with case	330	179
310	Production Laminate Trimmer	250	145
7700	10" "Lazerloc" Mitre Saw	634	344
347	7-1/4" "Framers" Circ Saw	225	129
743	347 Saw - left hand version	225	129
9743	NEW 743 Saw with case	255	148
9347	NEW 347 Saw with case	255	148
447	347 Saw with brake	245	134
843	447 Saw-left hand version	245	139

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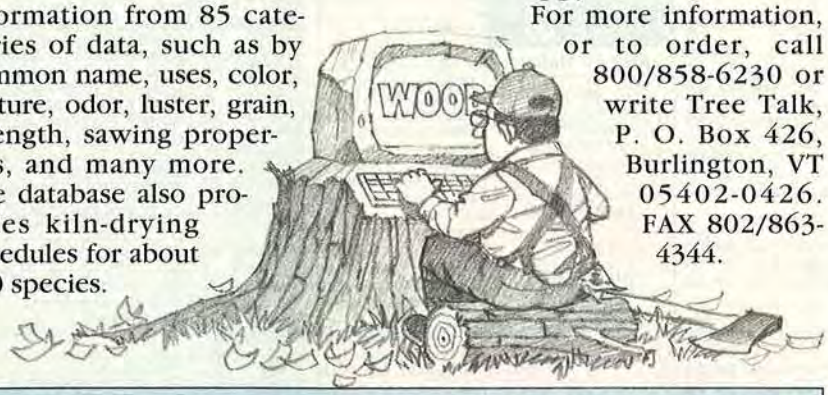
The information was gathered by wood scientist Dr. Charles K. Baah and the staff of Tree Talk, Inc., a Vermont-based nonprofit corporation concerned with trees and forest issues. *Woods of the World* will run on both Apple Macintosh and IBM-compatible computers, and costs $250 for either CD-ROM or full floppy diskette. There's also a condensed floppy version for $150. For more information, or to order, call 800/858-6230 or write Tree Talk, P. O. Box 426, Burlington, VT 05402-0426. FAX 802/863-4344.



DISNEY GOES TO GREAT LENGTHS (OF TIMBER) IN NEW WILDERNESS LODGE

Who else but the Walt Disney Company would tackle the creation of a massive, late-1800s style western lodge in the middle of Florida? Called Wilderness Lodge, the 728-room resort hotel adjacent to Walt Disney World was built to capture the character of the untamed West.

Vacationing woodworkers won't want to miss how the Urban Design Group of Denver met the challange of uniting old style with new flair. For instance, 85 loads of lodgepole pine logs were trucked in from Montana and Oregon. Some of them became five-story bundled columns—adorned with handcarved wildlife figures—that border the lobby. The entrance area also features Brazilian cherry, white oak, bird's-eye maple, and burled walnut laid into an intricately detailed "Indian carpet" floor pattern. Look as well for a pair of 55'-tall totem poles of Northwest Coast design. There's a special Disney cartoon character totem pole, too. Guest rooms follow through on the Old West theme with exclusive Mission-style furnishings and rustic decor.

Orlando-based artist William Robertson carved the wildlife figures that adorn the timber columns at Walt Disney World's new Wilderness Lodge resort.

Photographs: Courtesy of Bob Benson; Walt Disney World

ROCKING AWAY IN TEXAS

There's a workshop in Tyler, Texas, with the sign "Buckles and Boards." From it comes woodworking projects as American as apple pie and as Texan as a 10-gallon hat. And they're all the work of Bob Benson.

Take Bob's boot rockers, for instance. For several years now, they have captured the judges' eyes in *WOOD* magazine's annual Build-A-Toy™ contest. As you can see in the photo *below*, the sides are boot-shaped, then he emblazons them and the back with carved and painted Americana—the Statue of Liberty, the Liberty Bell, the national flag, and a bald eagle. For gifts to special people, like Dallas Cowboys' quarterback Troy Aikman, he added a football helmet in team colors carrying the appropriate jersey number. (Bob has presented commemorative boot rockers to former president George Bush, retired Army Gen. Norman Schwarzkopf, singer George Jones, and once Cowboy coach Tom Landry as well.)

Bob got the idea for his boot rockers from a lady at a crafts fair who wanted a rocker for her son. "So I made each of the sides like a cowboy's boot," Bob recalls, "and the Texas boot rocker was born."

Bob Benson and a Texas boot rocker

A REAL LOAD OF LUMBER

Total U.S softwood use in 1993 was a staggering 46.083 billion board feet, reports the Western Wood Products Association. That's enough lumber—if it were in 6'-long 2×4s laid end to end—to go back and forth from San Francisco to New York City nearly 5,000 times!

Illustration: Jim Stevenson

Print this article

DEEP DOWN INSIDE THIS PIECE OF CHERRY IS A QUEEN ANNE HIGHBOY SCREAMING TO GET OUT.

It's our feeling that every piece of wood is a project waiting to happen. And that inside every woodworker is the urge to turn that plank of cherry or maple or walnut into something beautiful, if only he had the right tools.

That's where we enter the picture. At Delta, we've been building professional quality woodworking tools for 75 years. The most extensive line of stationary and benchtop tools in the industry. For the professional, the do-it-yourselfer and everyone in between. Which is why we make five different scroll saws, nine table saws, five band saws–the list goes on and on.

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So before you start whacking away at that beautiful piece of cherry with a less than beautiful tool, call for the name of the nearest dealer, home center or hardware store carrying Delta tools. Delta International Machinery Corp., 800-438-2486. In Canada, 519-836-2840. Delta is a Pentair Company.

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UNDER $950.00 COMING SOON.
- 5 H.P., 220V, SINGLE PHASE MOTOR
- 2 DRUMS FOR ROUGH & FINISH SANDING IN A SINGLE PASS
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- TWO 4" DUST COLLECTOR PORTS
- MAGNETIC SAFETY SWITCH

8" HEAVY DUTY JOINTER
Free Extra Set of Blades a $25.00 Value.
- 1 1/2 H.P., 220V
- 3-KNIFE CUTTERHEAD
- 65" BED LENGTH
- MAGNETIC SWITCH

***EN3102**
REG.: $645.00
SALE: $615.00 (2 H.P. Also Available)

2 H.P. DUST COLLECTOR
- 220V, 12 AMPS
- 1,182 C.F.M.
- 2 INTAKES @ 4"
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***EN-DC20**
REG.: $275.00
SALE: $255.00
FREE 4" X 10' HOSE with purchase of any Dust Collector. a $14.50 Value

6" JOINTER

Free Extra Set of Blades a $22.00 Value.
- 1 H.P., 110/220V, SINGLE PHASE MOTOR
- CENTER-MOUNTED CAST IRON FENCE W/TABLE SLIDE PROTECTOR
- MICRO-ADJUSTMENT HAND CRANK FOR OUTFEED TABLE
- STURDY BASE CABINET W/DUST COLLECTOR CHUTE

NEW IMPROVED
***EN3104**
LOW PRICE: $380.00

Free Extra Set of Blades a $25.00 Value.
NEW IMPROVED
(2 H.P. Also Available)

8" HEAVY DUTY JOINTER
- 1 1/2 H.P., 220V, SINGLE PHASE MOTOR
- CENTER-MOUNTED CAST IRON FENCE W/TABLE SLIDE PROTECTOR
- MICRO-ADJUSTMENT HAND CRANK FOR OUTFEED TABLE
- MAGNETIC SAFETY SWITCH
- 65" LONG CAST IRON BED

***EN3105**
LOW PRICE: $660.00

(2 H.P. Also Available)
Free Feather-board a $9.75 Value.
NEW IMPROVED

10" H. D. TABLE SAW
- 1 1/2 H.P., 110/220V., SINGLE PHASE MOTOR
- 41" X 27" TABLE SIZE W/ CAST IRON EXTENSIONS
- BUILT-IN DUST COLLECTOR CHUTE
- PRECISION SINGLE LEVER RIP FENCE W/MICRO-ADJUSTMENT

***EN3201**
REG.: $375.00
SALE: $335.00

12" PLANER
- 2 H.P., 110V, 14 AMPS
- 16,000 C.P.M.
- 2-KNIFE CUTTERHEAD
- OPTIONAL DUST HOOD

EN-PN12
REG.: $375.00
SALE: $365.00
FREE SHIPPING IN CONTINENTAL U.S. & EXTRA SET OF KNIVES A $28.00 VALUE.

15" PLANER
- 3 H.P., 220V, 15 AMPS
- 2 FEED RATES: 16 & 20 F.P.M.
- 3-KNIFE CUTTERHEAD
- BUILT-IN DUST EXHAUST HOOD
- MAGNETIC SAFETY SWITCH

***EN-PN15**
REG.: $895.00
SALE: $855.00
Free Extra Set of Blades a $46.95 Value.

10" SUPER H.D. TILTING ARBOR TABLE SAW
- 3 H.P., 220V, 15 AMPS
- PRECISION GROUND CAST IRON TABLE
- PRECISION LEVER LOCK FENCE SYSTEM
- STEEL BASE CABINET
- OPTIONAL 52" RIP CAPACITY

***EN3202**
REG.: $840.00
NEW IMPROVED FENCE
SALE: $750.00

Free Motor Cover/ Enlon Exclusive a $50.00 Value

1 1/2 H.P. WOOD SHAPER
- 110/220V, 7,000/10,000 R.P.M.
- 1/2" & 3/4" SPINDLES
- CAST IRON TABLE
- OPTIONAL HOLD-DOWN ROLLER SET

***EN3302**
REG.: $490.00
SALE: $395.00
Free Dust Exhaust Hood/Enlon Exclusive a $28.50 Value

3 H.P. HEAVY DUTY WOOD SHAPER
- 220V, 7,000/10,000 R.P.M.
- 1/2", 3/4" & 1" SPINDLES
- CAST IRON TABLE
- OPTIONAL HOLD-DOWN ROLLER SET

***EN3303**
REG.: $785.00
SALE: $715.00
Free Dust Exhaust Hood/ Enlon Exclusive a $29.75 Value

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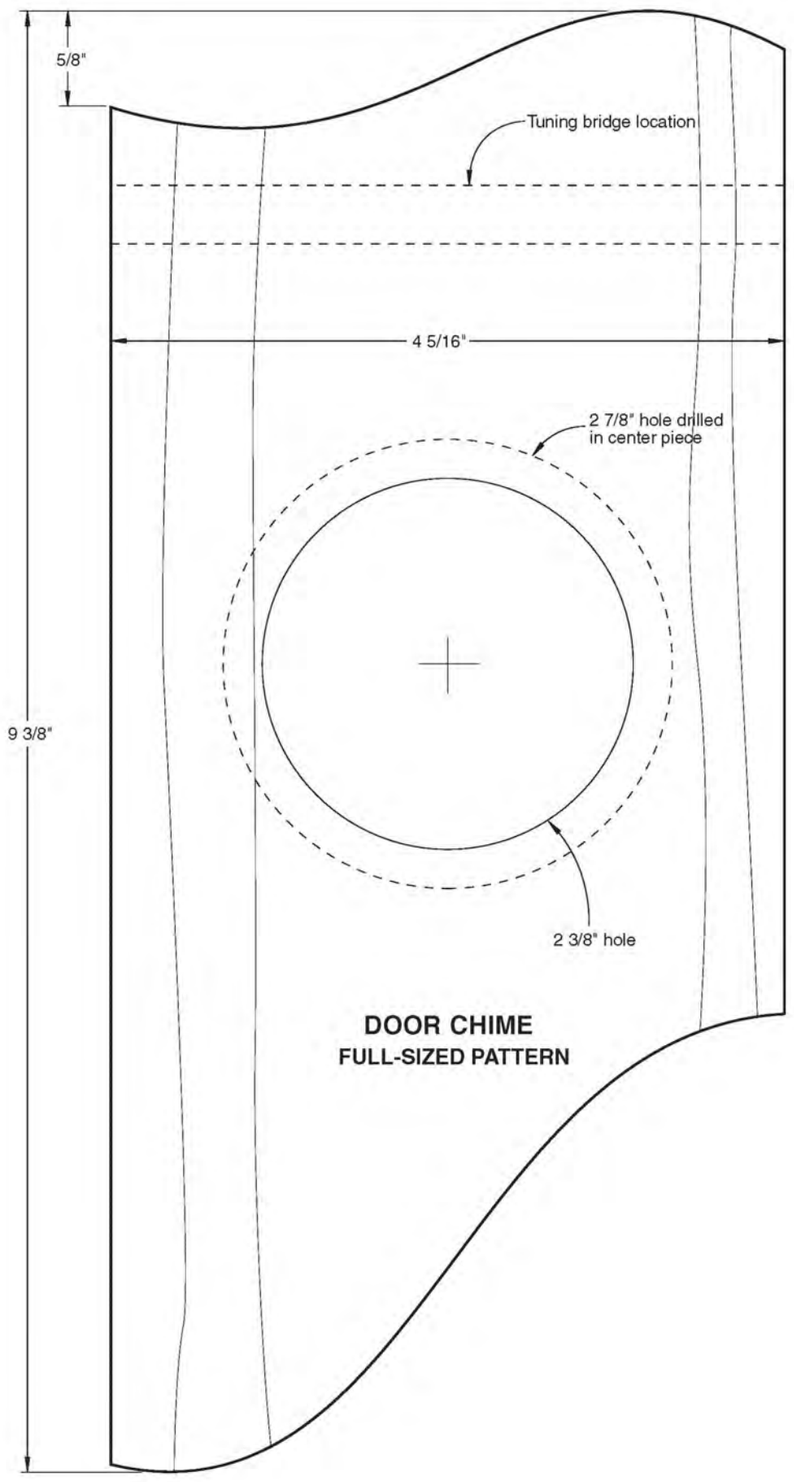
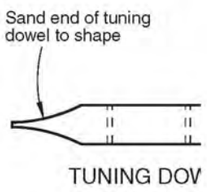


DOOR CHIME
FULL-SIZED PATTERN



Better Homes and Gardens®
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JANUARY 1995 ISSUE 76

Dear Reader: As a service to you, we've included full-sized patterns on this insert for irregular-shaped and intricate project parts. You can machine all other project parts using the Bill of Materials and the drawings accompanying the project you're building.

Page 56

Notable Door Decor

Sweetheart's Spoon

Benchtop Mobile Cabinet

See related articles on pages 60 and 65.

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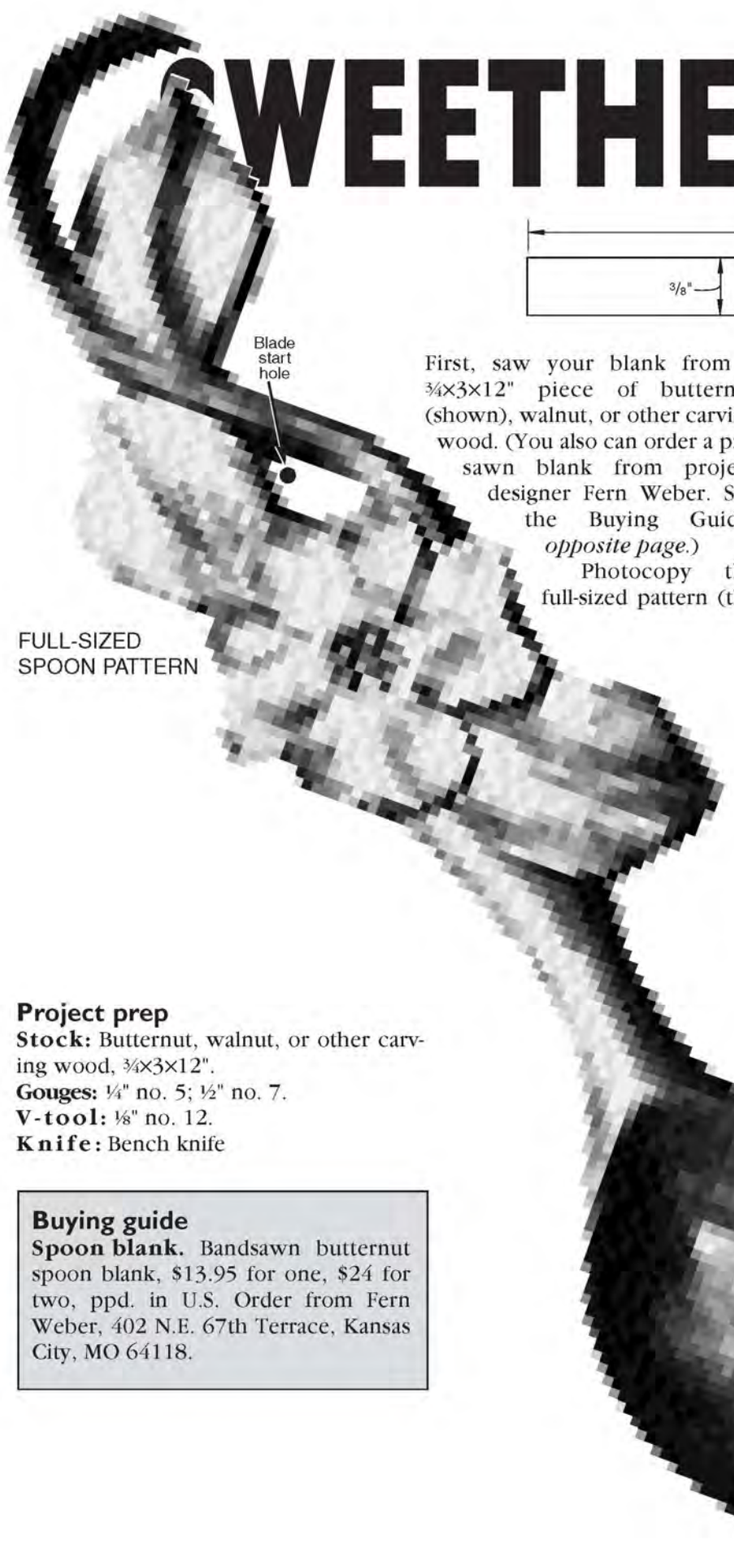
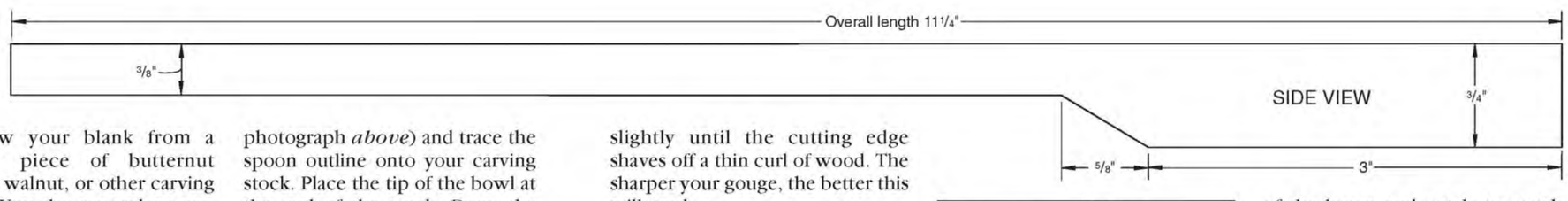
SWEETHEARTS' SPOON

Old Welsh custom called for a man to present his fiancée a beautifully carved wooden spoon. Through the years, such spoons have remained tokens of affection. Here's one you can carve for someone you love, or just for fun.



FULL-SIZED SPOON PATTERN



Project prep

Stock: Butternut, walnut, or other carving wood, ¾×3×12".
Gouges: ¼" no. 5; ½" no. 7.
V-tool: ⅛" no. 12.
Knife: Bench knife

Buying guide

Spoon blank. Bandsawn butternut spoon blank, $13.95 for one, $24 for two, ppd. in U.S. Order from Fern Weber, 402 N.E. 67th Terrace, Kansas City, MO 64118.

First, saw your blank from a ¾×3×12" piece of butternut (shown), walnut, or other carving wood. (You also can order a presawn blank from project designer Fern Weber. See the Buying Guide, *opposite page.*)

Photocopy the full-sized pattern (the photograph *above*) and trace the spoon outline onto your carving stock. Place the tip of the bowl at the end of the stock. Draw the side-view pattern onto one edge, with the thick part at the bowl end of the spoon.

Bandsaw the side-view pattern line. Tape the waste piece back into place on the stock for support. Drill a blade start hole where shown, and cut out the interior opening with a scrollsaw. Bandsaw the spoon outline.

Let the carving commence

Carve the bowl of the spoon first, starting with the front of the spoon (the flat side of the blank). On that side, draw a line about ⅛" in from the edge of the bowl. This line will establish the bowl's rim.

Scoop out the bowl with the no. 7 gouge. Start from the rim line, and carve toward the center of the bowl. Hollow it out to a depth of about ½" at the center. Cut with the grain or across it as you carve; if you go against the grain, you'll probably tear out or lift up long splinters of wood.

After roughing the bowl, smooth the surface with the no. 5 gouge. For a fine, smoothing cut, slide the beveled side of the gouge along the carving surface, then raise the handle ever so slightly until the cutting edge shaves off a thin curl of wood. The sharper your gouge, the better this will work.

Next, form the outside of the bowl. Using your bench knife, shape the outside to match the inside curve. Maintain the ¼" wall thickness established at the bottom of the bowl, but taper the thickness down to about ⅛" at the bowl rim. (You also could shape the outside with a rasp or by belt-sanding.) Sand the bowl smooth inside and out.

The handle comes next

Draw a centerline on the edge of the blank all around the handle. Here's an easy way to do that: Hold a pencil between your index finger and thumb. With the tip of your finger against the bottom surface of the stock, put the pencil point on the edge of the stock at the middle. Then draw the line, letting your finger ride along the bottom of the stock as a guide, as shown *above right.*

Stop-cut the lower edge of the leaf and the flower petal where they overlap the handle. Then, with the bench knife, carve the lower portion of the handle—the part between the top of the bowl and the flower and leaf—to an elliptical (roughly football-shaped) cross section. Undercut the leaf and the petal. Gently curve the top and bottom surfaces toward the centerline on the edge. Maintain a straight line along the edge for best appearance.

Next, carve the flower and leaves at the middle of the handle. Draw the petals, the six circular stamens

in the center of the flower, and the center rib of each leaf. Stop-cut the lines where the flower petals overlay the leaves and overlap each other.

With the gouge, hollow the outer corners of each petal, leaving an upturned edge. A depth of about 1/16" is fine. Form a square around each stamen circle in the center of the flower, using the V-tool. Round the stamens by carefully paring away the corners with the gouge or knife.

Gouge a depression along each leaf on each side of the center rib. Form channels that gently curve from the center rib to a depth of about 1/16", then back up to the outer edge of the leaf. Undercut the overlapping edges to give the carving more depth.

Using the V-tool, accent the flower with the V-shaped cut shown at the outer end of each petal and the radial lines near the center of the flower. Shallow cuts will suffice. Shape the underside of the leaves and petals to match the upper surfaces.

Top it off with a twist

Carve the portion of the handle between the flower and the upper leaf to a diamond cross-section. For guidance, sketch a centerline on the top and bottom surfaces as you did on the edges. Curve the four planes of the diamond slightly for a soft look.

Carve the upper leaf as you did the others. Instead of placing it on top of the handle, carve this one coming out of the side of the handle. The edge centerline should flow smoothly from the curved spoon handle out onto the edge of the leaf.

Now, carve the delicate curved tip. Take care as you form a diamond cross-section near the end—the narrowness and grain direction combine to make the handle easy to break in this vicinity. Small shaving cuts with the knife will see you through safely.

Clean up the undercuts and the back of the handle, then sand the spoon with 150-, 220-, and 320-grit sandpaper. Apply a clear finish. For a finish like that shown on Fern's spoon, start with a coat of McCloskey's wood sealer. Let that dry 24 hours, then brush on four coats of semi-gloss polyurethane, rubbing between coats with 0000 steel wool. After the final coat, apply paste wax.

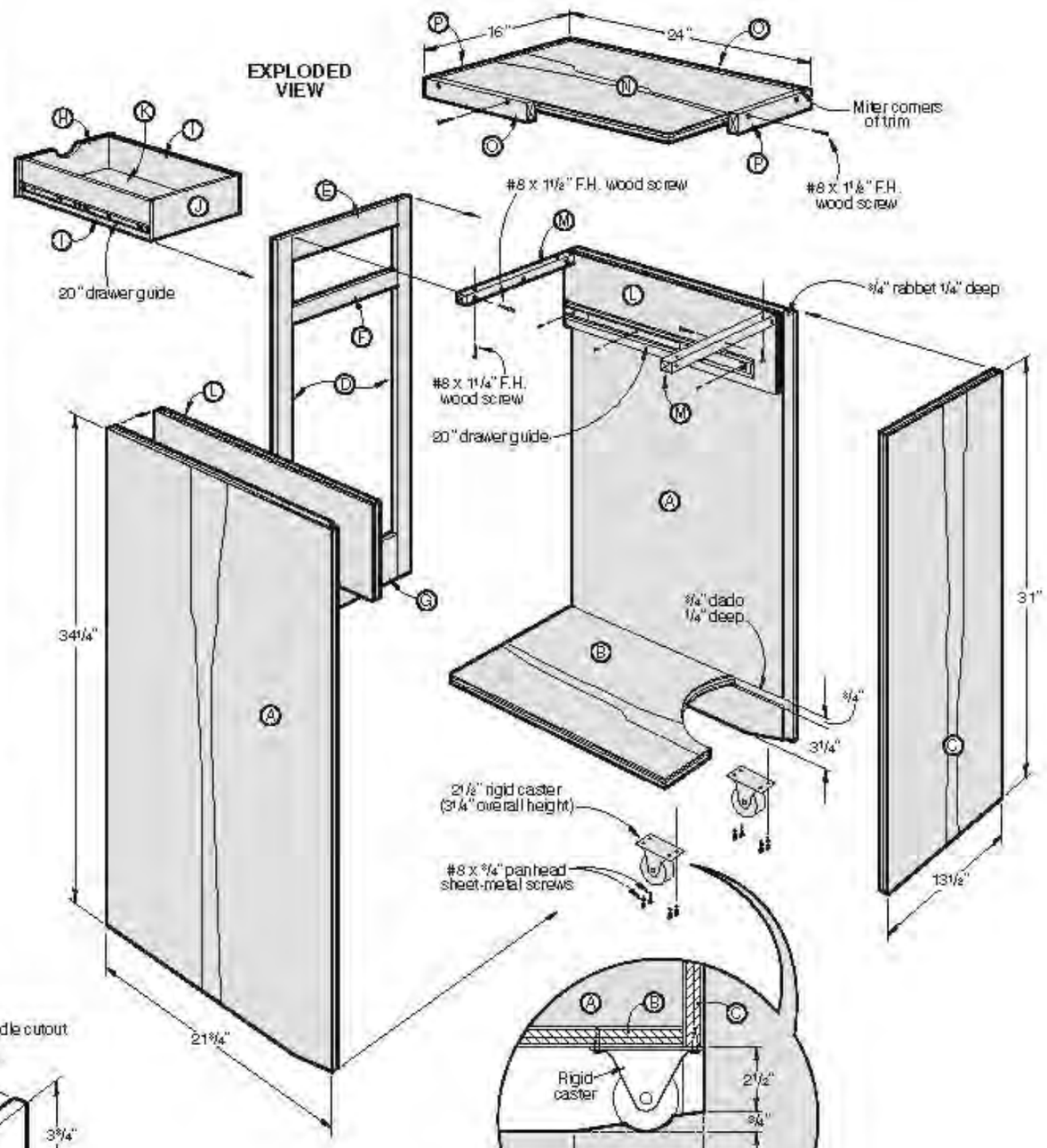
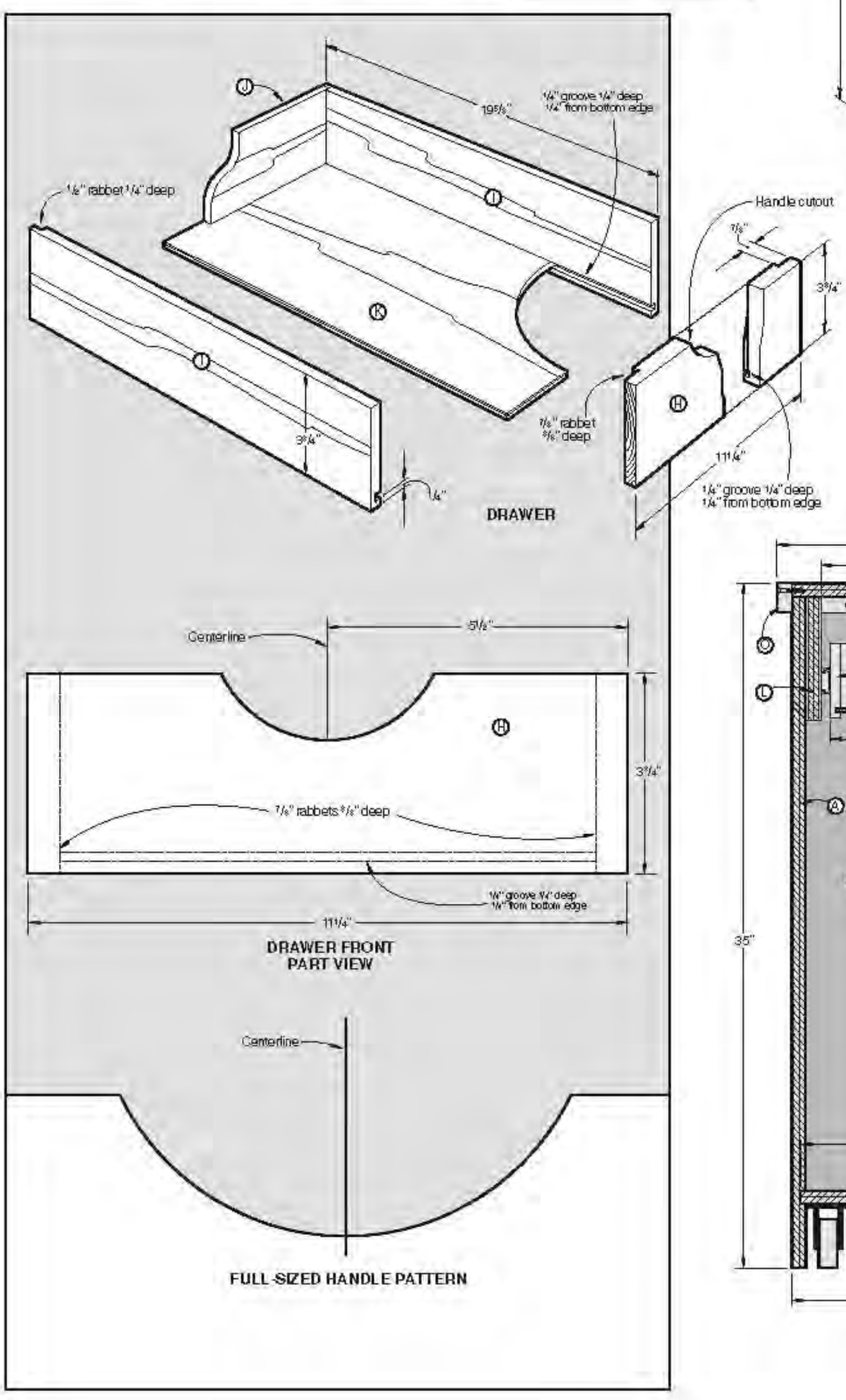
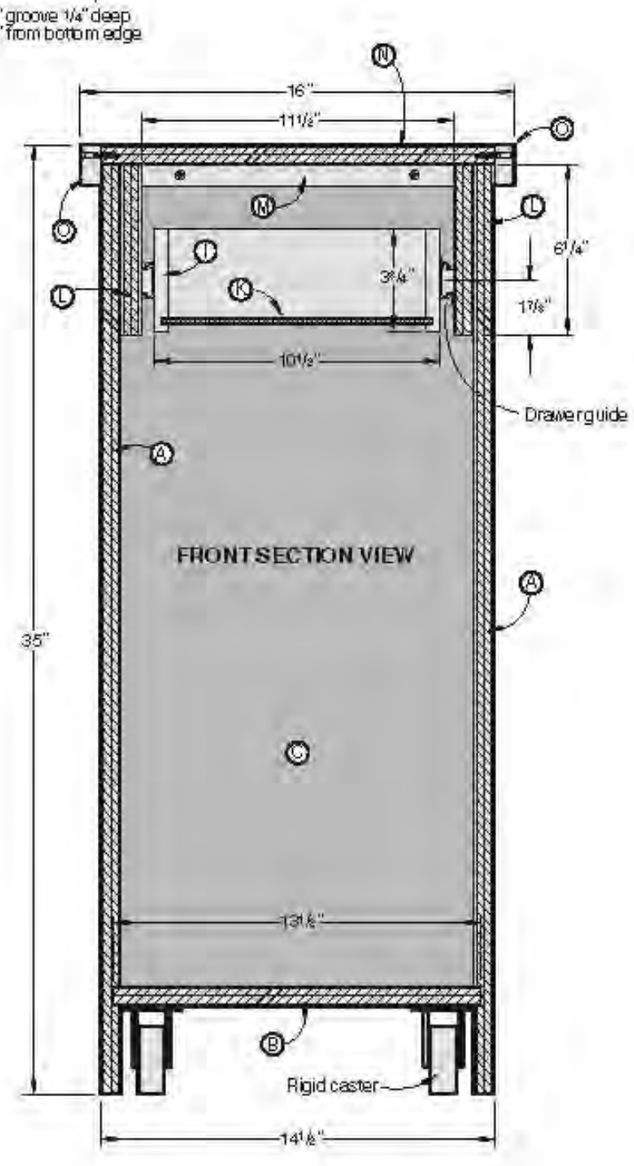
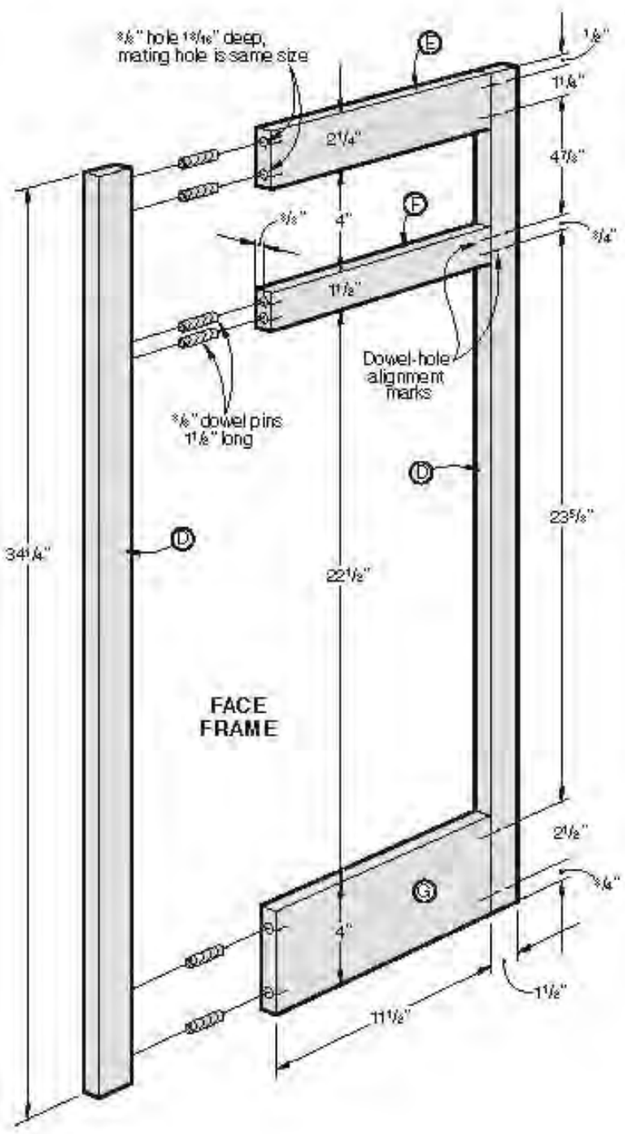
Project Design: © Fern Weber
Photographs: King Au; John Hetherington
Illustration: Kim Downing

MOBILE BENCHTOP-TOOL CABINET

Every benchtop tool, whether it's a scrollsaw, drill press, or grinder, needs a place to call home. Our easy-to-build mobile cabinet not only provides a sturdy work surface, it features ample drawer and open storage as well.

Bill of Materials

Part	Finished Size T	W	L	Matl	Qty.
A sides	¾"	21¾"	34¼"	BP	2
B bottom	¾"	13½"	21"	BP	1
C back	¾"	13½"	31"	BP	1
D face frame stile	¾"	1½"	34¼"	B	2
E upper rail	¾"	2¼"	11½"	B	1
F center rail	¾"	1½"	11½"	B	1
G bottom rail	¾"	4"	11½"	B	1
H drawer front	¾"	3¾"	11¼"	B	1
I drawer sides	½"	3¾"	19⅝"	B	2
J drawer back	½"	3¼"	10"	B	1
K drawer bottom	¼"	10"	19½"	BP	1
L spacers	¾"	6¼"	21"	BP	2
M cleats	¾"	1"	11½"	B	2
N top	¾"	14½"	22½"	BP	1
O top trim	¾"	1½"	24"	B	2
P top trim	¾"	1½"	16"	B	2

Materials Key: BP-birch plywood, B-birch

Supplies: 2-2½" rigid casters (3¼" overall height), with 8-#8x¾" panhead sheet-metal screws, 20" drawer guides, #8x1½", #8x1¼" flathead wood screws, ⅜" dowel pins 1½" long, primer, red enamel paint, clear finish